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MONTHLY REPORT

OF THE

DEPARTMENT OF AGRICULTURE

FOR

NOVEMBER AND DECEMBER,

1872.

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MONTHLY REPORT.

DEPARTMENT OF AGRICULTURE,
Statistical Division, December 21, 1872.

SIR: I herewith present for publication a digest of returns of correspondence, showing the average yield per acre and price of each principal crop in the counties of the several States, with a statement of the condition and qualtity of certain farm crops; also a record of prices of farm products in the principal cities, and current statistical *data*, and the results of investigations in the several divisions of the Department.

Respectfully,

J. R. DODGE,
Statistician.

HON. FREDERICK WATTS,
Commissioner.

AVERAGE YIELD AND HOME PRICE OF FARM CROPS.

YIELD PER ACRE.—The average yield of corn per acre, as reported by correspondents, stands highest in Iowa, 40.8 bushels, the Illinois average being 39.6, that of Indiana 39.8, and of Ohio 39.5. The average of the States of the fortieth paralled is within a fraction of 40 bushels, those of Pennsylvania and Nebraska being 39 bushels, and that of New Jersey 39.5 bushels. New England, with her garden-patches of corn, returns 31 bushels for Massachusetts and Rhode Island, 32.2 for Connecticut, 36.1 for Maine, and 38.2 for New Hampshire. In New York the average presented is 37.5. Texas makes the highest southern average, 28.5 bushels, declining to 24.3 in Arkansas, and 24 in Tennessee, and to 17.5 in Mississippi, to 13 in Georgia; the lowest average being 9.6 in Florida.

The highest wheat returns are those of Minnesota, California, and Texas; the lowest are those of South Carolina, the range being from 6.4 to 18.7 bushels per acre. The rate is materially higher in the Gulf coast States than in the Southern Atlantic States, increasing from Georgia westward.

The rate of yield for rye stands lowest in South Carolina, and highest in California, the range being from 6.2 bushels to 29.1 bushels. A reference to the tables will show the variation in these averages, which are in most cases higher than those of wheat.

The highest average for oats is 40 bushels for Nebraska; the lowest is 8 bushels for South Carolina. Averages ranging from 40 down to 30 bushels come in the following order: Nebraska, Iowa, California, Minnesota, Illinois, Rhode Island, Vermont, Connecticut, Missouri, Pennsyl-

vania, Wisconsin, New Hampshire, Texas, Kansas, Indiana, Ohio, and Michigan.

Kansas makes an average of 28.2 bushels for barley, and West Virginia 11.5. The only averages above 100 bushels of potatoes per acre are those of Minnesota, Texas, Oregon, Connecticut, Vermont, Massachusetts, and North Carolina.

The averages for hay range from seven-tenths of a ton in Maryland to 1.45 tons in Illinois.

Average rates of yield for other crops are presented in detail in the tables.

PRICES.—Prices of cereals rule comparatively low, corn especially bearing prices that can scarcely repay the expense of cultivation in many of the Western States. Where fuel is scarce and dear, the old practice of burning corn has been revived. In some instances it has been economically used in manufactories. There is a wide range of prices in the several counties in a State, those upon through lines of railroad showing higher rates; but wider differences are caused by disparities between local supply and demand. There are new counties in frontier regions, with small production and increasing population from immigration, in which prices are almost as high as in eastern cities.

Averaging the local prices of corn, the lowest rate is 18 cents per bushel in Nebraska and Iowa, while that of Kansas is 22, and Illinois 24. Going eastward it rises to 29 in Indiana, 34 in Ohio, 60 in Pennsylvania, and 62 in New Jersey. The range in New England is from 84 in Vermont to 95 in New Hampshire. The average for New York is 70 cents. One bushel of corn in Massachusetts appears to be worth five in Iowa. In the South the rate is highest in Florida, at $1.20 per bushel, and lowest in Texas, 43 cents. The price increases from Delaware to South Carolina, the rates being, in their order, respectively, 55, 57, 58, 62, and 96 cents; in Alabama 78, Georgia 86, and 88 in Mississippi and Louisiana.

The averages for wheat range between $1.95 in Massachusetts and 74 cents in Oregon, the next lower being, respectively, 78 cents for Nebraska, 83 for Minnesota, and 85 for Iowa. The crop being poor in Kansas and Missouri, local prices average in those States respectively, $1.42 and $1.41, about the same as in Tennessee and West Virginia.

For detailes of prices of rye, barley, oats, potatoes, hay, &c., reference is made to the tables.

CONDITION OF THE CROPS.

CORN.

At the close of the season, the crop ripened, mostly gathered in all parts of the country, and a sufficient amount of it "shucked" to determine its quality, it is manifest that a product as large as that of 1870 (not that of 1869, as reported in the census, which was a partial failure) has been produced. When the returns from distant points are completed, and calculations are perfected, it is probable that a crop of about 1,100,000,000 bushels will be indicated. Its intrinsic value in proportion to quantity is also somewhat larger than usual, the quality being above an average. Very little failed to ripen. Greater success than usual has attended efforts at corn-growing at high elevations, as in the

Rocky Mountain area, though it was injured at many points by frost, and is not deemed a safe crop at elevations of 5,000 feet north of 39°.

In the Carolinas the bottom-lands were in many places too wet for a crop, either in yield or quality, while the uplands gave results which were scarcely ever surpassed. As is ever the case, there were late plantings in all sections which were either injured by drought or failed of full condition and perfect maturity. There were in all the States fields undrained, in bad tilth, or suffering from poverty, which were partial failures, though the fructifying rains and generous warmth of the season went far to make amends for the cultivator's negligence.

The returns of "product compared with last year," which take into consideration both area and rate of yield per acre, average above 100 in all but seven States, viz: Rhode Island, 96; Delaware, 92; Maryland, 98; Virginia, 93; Florida, 87; Wisconsin, 99; Minnesota, 98. Those giving an increase are, Maine, 113; New Hampshire, 108; Vermont, 114; Massachusetts, 103; Connecticut, 105; New York, 110; New Jersey, 120; Pennsylvania, 115; North Carolina, 116; South Carolina, 108; Georgia, 118; Alabama, 123; Mississippi, 120; Louisiana, 130; Texas, 134; Arkansas, 109; Tennessee, 102; West Virginia, 106; Kentucky, 118; Ohio, 111; Michigan, 105; Indiana, 108; Illinois, 107; Iowa, 103; Missouri, 121; Kansas, 120; Nebraska, 105; California, 127; Oregon, 105. As the comparison is made with the crop of last year, which was relatively small in some States while large in others, these figures exhibit a wider range than if the comparison were only with average condition or yield per acre. The distinction should be observed between a report of "average condition" without reference to area, and aggregate product in view both of area and rate of yield—a difference which some unusually well-informed newspapers have of late failed to notice, thus making an apparent discrepancy in our reports from an awkward blunder in quoting them.

The following extracts from correspondence relate to quality of the crop and peculiarities of its condition:

MAINE.—*York:* Ears full. *Sagadahoc:* Reduced acreage, but better growth and maturity of the crop. *Cumberland:* Acreage reduced, but more sweet corn planted for canning; 2,000,000 cans put up, yielding to the farmer $90,000. *Waldo:* Excellent quality. *Somerset:* Never better. *Aroostook:* Crop good in spite of wet; first frost in the middle of October.

MASSACHUSETTS.—*Worcester:* Crop good and sound. *Franklin:* Molded badly in the shock. *Norfolk:* Quantity average; better ripened than usual.

RHODE ISLAND.—*Washington:* Reduced in quantity on sod-land 5 per cent. by white worms; depreciated in quality 10 per cent. by wet.

CONNECTICUT.—*New London:* Crop better than for years, though injured by wet. *Litchfield:* Extraordinary growth of stalks, and eared well.

NEW YORK.—*Delaware:* Full growth, but delayed in gathering by wet. *Kings:* The county does not raise half enough corn for home consumption. *Columbia:* Sound and good. *Chemung:* Average acreage; quality fine; large acreage of corn saved for fodder. *Albany:* Splendid and well-matured crop. *Steuben:* Crop good; conditions unusually favorable. *Warren:* Sound and bright. *Erie:* All sound. *Chautauqua:* Ripe and sound. *Ontario:* Great crop. *Rockland:* Crop unusually large and fine. *Onondaga:* Suffered from wet, but a superior crop.

NEW JERSEY.—*Sussex:* Good as ever known; scarcely a poor field to be seen. *Burlington:* Ripened better than last year. *Warren:* Above average; plump, solid, sound, and heavy. *Gloucester:* Crop almost unprecedented. *Hudson:* Better than was anticipated; frost delayed.

PENNSYLVANIA.—*Lawrence:* Crop good, but injured by wet. *Lancaster:* Average; would have been greater but for wind-storms. *Mifflin:* Very good. *Crawford:* Never better. *Armstrong:* Husked in good order; that part of the crop replanted on account of cut-worms is quite soft. *Union:* Average; would be more but for storms lodging it on the ground. *Montgomery:* Large, and generally good. *Chester:* Crop large and sound. *Bucks:* Never better; fodder will largely compensate the deficiency of hay. *Wayne:* Husking delayed by wet. *Centre:* Abundant and well matured.

MARYLAND.—*Baltimore:* Reduced slightly below average by drought; but this will be more than compensated by increased acreage and good quality. *Caroline:* Shortened a little, but excellent. *Washington:* Better than was expected; acreage increased. *Cecil:* Early planted corn injured by drought; late planted better.

VIRGINIA.—*Powhatan:* Crop short but supplemented by heavy oak-mast. *Pittsylvania:* Slight increase in product and quality. *Fluvanna:* Shortened by drought. *Middlesex:* Improved 10 per cent. since last report; quality good, but quantity still below average. *Nelson:* Shortened by drought. *Stafford:* Severely injured by drought. *Shenandoah:* Reduced by drought. *Madison:* Excellent on bottom-lands; indifferent on high lands. *Highland:* Never better. *Washington:* Crop fell off from drought. *Craig:* Affected by drought. *King and Queen:* Disastrously short; our main staple. *Lancaster:* Shortened by drought. *Buckingham:* Ruined on high ground; splendid on low land. *Cumberland:* Greatly improved by late rains. *King George:* Poor yield. *Prince Edward:* Five per cent. above last year. *Fauquier:* Better than was expected, on account of thorough cultivation. *Fairfax:* Somewhat injured by warm fall and rain. *Henrico:* Not so good as was last reported. *Gloucester:* Injured by severe drought. *Rockingham:* Good yield in spite of drought. *Westmoreland:* Exceedingly small crop; shortened by the terrible drought. *Southampton:* Suffered from drought and neglected for cotton.

NORTH CAROLINA.—*Chowan:* Good. *Bladen:* Heavy and good. *Greene:* Ten per cent. below average. *Gaston:* Uniformly good; 20 per cent. above average. *Mecklenburgh:* Twenty-five per cent. greater yield than last year. *Rowan:* Best crop in twenty-four years; excellent weather for gathering. *Alexander:* Bottom crops below average; upland crops above. *Allamance:* Best crops in ten years. *Perquimans:* Full average and good. *Wilkes:* Bottom crops average; uplands one-sixth above. *Stokes:* Not so good on bottoms, but better than usual on uplands. *Buncombe:* Extraordinary crop, flinty, sound, and heavy. *Iredell:* Best crop in fifteen years. *Stanley:* Good in spite of early insect ravages; especially fine on bottoms. *Edgecombe:* Ears light. *Jackson:* Gathers beyond expectation.

SOUTH CAROLINA.—*Fairfield:* More sound corn than in any season since 1864. *Greenville:* Neglected, as usual, for cotton. *Clarendon:* Full crop in some sections; in others two-thirds: *Orangeburgh:* Gathers well. *Chester:* Crop 50 per cent. greater and 25 per cent. better than last year. *Richland:* Unusually good.

GEORGIA.—*Muscogee:* Acreage and yield the same as last year; poor crop. *McDuffie:* Best crop for years. *Cobb:* Good corn season; better yield than last year, but on a reduced average. *Walton:* Heaviest crop for many years. *Clayton:* Upland corn good, bottom corn injured by wet. *Wilkes:* Full average and fine. *Whitfield:* Largest crop for years. *Clay:* Fifteen per cent. above last year, and of better quality. *Liberty:* Short though protracted drought, and injured by a storm; quality better than last year. *Schley:* Shortened by drought, but quality as good as last year.

FLORIDA.—*Leon:* Less in product but better in quality. *Orange:* Shortened by drought one half. *Columbia:* Short but good. *Taylor:* Five per cent. below average in quality.

ALABAMA.—*Morgan:* Crops would have been unparalleled but for a partial flood during the summer. *Colbert:* Crop exceeds last year in spite of storm and drought; this is attributed to early planting and improved cultivation. *Chambers:* Improved in quantity and quality. *Montgomery:* Good crop in quantity and quality. *Macon:* One of the best crops ever raised. *Lawrence:* Good in quantity and quality. *Tuscaloosa:* Good yield and quality. *Randolph:* Better than last year.

MISSISSIPPI.—*Kemper:* Best crop for years. *Jefferson:* Large and superior yield. *Yazoo:* Late planted, but with favorable weather the yield was large. *Rankin:* Nearly every planter has raised corn enough for his own demand. *Tishemingo:* Injured by drought. *Wilkinson:* Full average and in good condition. *Wayne:* Injured by drought.

LOUISIANA.—*Franklin:* Both early and late very good. *Lafourche:* Not so many ears to the stalk, but more grain and less shuck. *Carroll:* Good in quantity and quality.

TEXAS.—*Lampasas:* Full crop. *Austin:* One of the best crops ever raised in the country. *Gonzales:* But little injured by the severe drought. *Fayette:* Exceedingly good in quantity and quality. *Coryell:* Some farms made as high as 65 bushels per acre. *Burnet:* Very abundant; some farms double last year's crop. *Marion:* 10 per cent. above average; acreage about average. *Kaufman:* 200 per cent. of last year's crop and heavier. *Upshur:* Improved in quantity and quality. *Travis:* Never better. *Red River:* Good. *Rusk:* Not so good; ears short and husks long. *Craven:* Good. *Henderson:* Corn abundant; mast light.

ARKANSAS.—*Fulton:* Damaged by squirrels. *Jackson:* Reduced by squirrels and blackbirds. *Arkansas:* Crop made before the drought set in. *Montgomery:* Increased acreage; early planted good; late planted short. *Washington:* Matured before the drought.

TENNESSEE.—*Jackson:* Early plantings good; later ones light. *Blount:* Crops made before the drought. *Gibson:* Early crops good; later ones short. *Rhea:* Well ripened and sound. *Madison:* Quality improved by dry weather. *Dyer:* Unusually large crop;

beyond home demand. *Lincoln:* Heavy and good. *Bradley:* Far superior to last year's crop. *Sevier:* Good in spite of drought. *Greene:* Lighter than last year. *Coffee:* Above average, though shortened by drought. *Hardin:* Early crops gathering better than was expected; late crops lighter. *Monroe:* Good, though somewhat spotted. *Giles:* Mostly gathered in fine condition. *Fentress:* Increase both in acreage and yield; best quality; 40 to 50 cents per bushel. *Wayne:* Early corn better than expected; late crops light.

WEST VIRGINIA.—*Tyler:* Shortened by drought; quality good. *Jefferson:* Acreage increased 8 per cent. and yield per acre 5 per cent. *Brooke:* Irregular; some fields only a half crop; mostly saved from frost; fodder good. *Braxton:* Good. *Pocahontas:* Ripening finely in good fall weather. *Monongalia:* Got in in good order in the fine weather.

KENTUCKY.—*Owsley:* Very fine. *Shelby:* Drought cut down late corn very low. *Scott:* Early crop average; late corn but half a crop. *Russell:* Best crop for many years. *McLean:* A most prosperous corn year. *Lincoln:* Crop good and well matured. *Laurel:* Never better. *Hardin:* Large crop; 30 cents per bushel. *Graves:* 20 per cent. above average; good quality. *Anderson:* Below average, light and chaffy.

OHIO.—*Athens:* Large crop. *Darke:* Very heavy and well matured. *Logan:* Very large crop. *Fulton:* Splendid crop. *Warren:* Average; better on uplands than bottoms. *Tuscarawas:* Well matured. *Lorain:* Large yield; well matured. *Ross:* Splendid crop. *Pickaway:* Light but sound. *Morrow:* Largest yield for years; quality good. *Licking:* Largest crop yet raised. *Hancock:* Crop saved by later rains; gathered in good condition. *Franklin:* General crop never so heavy; selling at 25 cents per 70 pounds. *Delaware:* Never better; harvested in good order; brings 30 cents at the railroad. *Crawford:* Good; ripened before frost; probably a larger quantity in the county than at any time in five years. *Coshocton:* Above average in quantity and superior in quality. *Ashland:* Crop large and excellent. *Adams:* Somewhat shortened by drought since August, but well matured by the late season. *Brown:* Escaped frost, but loose on the cob and chaffy.

MICHIGAN.—*Washtenaw:* No. 1 in quantity and quality. *Van Buren:* Seriously affected by drought. *Ottawa:* Shortened by backward spring and subsequent drought. *Oakland:* Crop would have been much larger but for cut-worms. *Mason:* Fine. *Lenawee:* Abundant and good. *Jackson:* Recovered from the cut-worm injuries early in the season; well ripened. *Clinton:* Increased acreage and improved condition. *Mecosta:* Good in spite of drought. *Antrim:* Good crop.

INDIANA.—*Noble:* Where not replanted the crop was never better. *Montgomery:* Fine in the ear, but lighter in the grain than last year. *Marion:* Crop large, but lighter in weight than last year. *Madison:* Very fine and abundant. *La Grange:* Decreased by drought. *Hamilton:* Excellent and in good condition. *Decatur:* Corn not well cultivated, on account of wet, in April and May, but the fine weather of June and July secured an average crop in quantity, though 5 per cent. below average in quality. *Steuben:* Below average; many fields destroyed by the grub-worm. *Hancock:* Excellent. *Clay:* Injured by wet July and dry fall. *Morgan:* Yield increased, but quality deteriorated. *Owen:* As good as any former crop, and double of last year; the rains came promptly at each critical time. *Scott:* Shortened 20 per cent. by drought. *Franklin:* A little better than last year, and the best in forty years.

ILLINOIS.—*Whiteside:* Heavy and good. *Winnebago:* Matured in the best possible condition. *Tazewell:* Matured finely before frost. *Saint Clair:* Deteriorated by drought. *Stephenson:* Largest and best crop ever raised. *Putnam:* Somewhat damaged by being blown down. *Ogle:* Very good quality. *Madison:* Prematurely ripened. *Macoupin:* Matured before frost. *Livingston:* Low prices—12 cents—requires four bushels to get one to market. *Iroquois:* Filled on the cob from one end to the other; perfectly matured before frost. *Grundy:* Abundant, with one-fourth of last year's crop on hand; high freights reduce prices. *Douglas:* Gathered in good condition; low prices. *Cook:* Best crop in thirty-five years. *Clinton:* Injured by chinches. *Champaign:* Early-planted corn better than last year; late crops frosted. *Perry:* Reduced by chinches. *Cass:* Full average in spite of lack of cultivation on account of rain at the opening of the season. *Franklin:* Injured by drought and chinch-bugs. *Lee:* Splendid corn season. *Mason:* Good, though damaged by winds. *Fayette:* Good, and well saved. *Clark:* Full average everywhere; especially fine in sand-prairies.

WISCONSIN.—*La Fayette:* Propitious corn season. *Saint Croix:* Matured better than usual. *Green Lake:* Fair and well ripened. *Calumet:* Later part of the season especially favorable. *Pierce:* Well ripened. *Outagamie:* Greatly damaged by cut-worms.

MINNESOTA.—*Steele:* Had a poor start, but recovered and ripened well. *Wright:* Well ripened, but rather small. *Fillmore:* Best crop yet grown. *Redwood:* Much corn replanted; injured by blackbirds.

IOWA.—*Tama:* Bottom corn injured by high water in June. *Muscatine:* Average quality. *Monona:* Injured by storm July 19. *Marion:* Injured in some localities by chinches. *Lee:* Matured well on upland and dry soils. *Jackson:* Ripened too

rapidly; loose on the cob. *Howard:* Good. *Clinton:* Great crop. *Benton:* Last year's crop one of the best ever raised; this year's, 30 per cent. better.

MISSOURI.—*Scott:* Early corn, average; late, nearly a failure. *Platte:* Finest crop in ten years. *Phelps:* Injured by chinches. *Newton:* Less than last year, but sound and good. *Mercer:* Superior to all crops raised during late years. *Linn:* Largest and best crop ever raised; sells at 15 to 20 cents per bushel. *Lincoln:* Crop well saved. *Holt:* Extraordinary crop, even for this region. *Harrison:* Well matured; better in quality than last year, but shorter. *Greene:* Crop very large, but grain somewhat light. *Chariton:* Fine corn season. *Cass:* Good in quantity and quality. *Caldwell:* Splendid crop where well tilled. *Cape Girardeau:* Not uniformly good, but a general average. *Clay:* Good condition. *Ralls:* Excellent and more abundant than for five years past. *Saint Clair:* Very light, owing to late planting and dry fall. *Pemiscot:* Did not fill out well. *Franklin:* Good quality. *Lane:* Larger than for ten years. *Maries:* Injured by chinches.

KANSAS.—*Woodson:* Unprecedented crop. *Washington:* All crops good. *Riley:* Largest and best crop yet raised. *Nemaha:* Heavy and dull, sale at 15 cents per bushel. *Lyon:* Magnificent crops. *Labette:* Sod crops—one-fourth the whole—below last year's yield. *Jefferson:* Late planted on account of wet, but redeemed by the fine weather of September and October; cribbed in excellent order. *Crawford:* Late corn failed to mature well; earlier crops good. *Cloud:* Light and shrunken on the cob. *Douglas:* One of the heaviest crops ever produced in Kansas; price 20 cents per bushel. *Linn:* Very large crop. *Republic:* Corn plenty: late planted generally worm-eaten. *Coffey:* Large and sound crop, but portions of it poorly cultivated on account of rain. *Miami:* In bad condition for gathering, having been twisted by a hurricane in September.

NEBRASKA.—*Thayer:* Crop would have been extra but for grasshoppers. *Nemaha:* Corn harvest weather fine. *Washington:* Superior to any former crop both in quantity and quality. *Cass:* Well matured.

CALIFORNIA.—*San Bernardino:* Abundant and cheap; $1 per cental sacked; no demand. *Amador:* Satisfactory in quality and quantity. *Contra Costa:* Quality excellent. *Sacramento:* Blighted by northwest winds early in the season, hence the crop is short.

OREGON.—*Linn:* Average quality. *Douglas:* Turns out better than was expected; stood the drought better than any other crop. *Clackamas:* Frequent showers brought out the crop finely.

UTAH.—*Box Elder:* Good except where injured by frost. *Cache:* Injured by late frost. *San Pete:* Too cold for corn this year; many farmers feeding their crop as fodder without husking.

COLORADO.—*Larimer:* Injured by early frost.

DAKOTA.—*Clay:* Damaged by grasshoppers. *Bonhomme:* Injured by grasshoppers. *Minnehaha:* Well matured.

ARIZONA.—*Yuma:* Increased culture; crops averaging 50 bushels per acre are reported.

WASHINGTON.—*Thurston:* Only used in the green state for roasting. King Philip will ripen in favorable localities. Minnesota sweet has been introduced and sells for half a dollar per ear.

COTTON.

The present may be classed with the unpropitious seasons for cotton production, but it is not a more unfavorable year than the preceding one. It has been productive of somewhat less than average results, not from a failure of the "stand" of plants, nor from excessive cold and moisture in the spring so repressive of growth in cotton and preventive of clean culture, but from the wider prevalence of insect depredations, and from local droughts of more or less severity. The plant has been earlier in maturing than usual, and quicker to decay, leaving less for destruction by frosts, which have somewhat anticipated their average date of appearing. In the Carolinas and Georgia, fertilizers have aided in advancing the period of maturation. Returns since November have not advanced the crop prospects of the season, but are not of such a character as to change materially the estimate derived from the November returns.

The November digest of tabular and other returns, the substance of which was telegraphed to the press last month, is as follows:

The weather has been fine for picking. Frosts have been earlier than usual in the more northern States; but an earlier maturity of the plant

is indicated everywhere, and the past month has been quite favorable for the development of the maturing bolls, while the returns of the condition since August have been much below the average. They have been higher than those of the corresponding months of the previous and very unfavorable season, averaging in October, 82 against 76, and in September, 91 against 81. The November returns give the indicated total product in comparison with the small crop of 1871, and the average made is about 16 per cent. increase, with an area in cultivation larger by 12 to 13 per cent. The greatest losses from the prevalence of the army and boll worm are found in Florida and Alabama. In Louisiana, Mississippi, and Georgia local damage has been heavy. In Arkansas a material reduction of the yield was caused by drought in July and August. The comparison by States with last year's crop is as follows: North Carolina, 121; South Carolina, 124; Georgia, 119; Florida, 102; Alabama, 111; Mississippi, 112; Louisiana, 121; Texas, 126; Arkansas, 115; Tennessee, 110. Missouri, Virginia, Illinois, and other States which together produced 55,000 bales in 1860, and in which cotton culture was stimulated in several subsequent years, now scarcely yield 10 per cent. of that amount.

The total production, as indicated by the returns of the first week in November, is made very nearly 3,450,000 commercial bales. At that date, apparently 25 to 30 per cent. of the crop, or nearly 1,000,000 bales, remained to be picked, and subject to the vicissitudes of the weather, which might decrease the annual aggregate by beating storms, or slightly enlarge it by a favorable season for opening and gathering the fiber of the top crop. The indicated product of fiber per acre returned from each county makes the following averages for each State, viz: North Carolina, 173 pounds; South Carolina, 182; Georgia, 180; Florida, 125; Alabama, 170; Mississippi, 200; Louisiana, 215; Texas, 220; Arkansas, 170; Tennessee, 190. The area of cotton, as calculated from the returns of 1872, is as follows: In North Carolina, 450,629; South Carolina, 570,652; Georgia, 1,311,331; Florida, 158,099; Alabama, 1,387,972; Mississippi, 1,537,618; Louisiana, 940,218; Texas, 914,269; Arkansas, 693,515; Tennessee, 518,605. In calculating the indicated product, the average bale is estimated at 465 pounds.

On the basis of former estimates of acreage, and the November returns of production, the indicated yield per acre and product in pounds (which should be received as an unbiased rendering of returns of correspondents at that date, rather than an authoritative prediction of what the crop, when fully gathered, will prove to be) is as follows:

States.	Number of acres.	Yield per acre.	Number of pounds of fiber.	Number of commercial bales.
		Pounds.		
North Carolina	450, 629	173	77, 958, 817	167, 653
South Carolina	570, 652	182	103, 858, 664	223, 351
Georgia	1, 311, 331	180	236, 039, 580	507, 612
Florida	158, 099	125	19, 762, 375	42, 499
Alabama	1, 387, 972	170	235, 955, 240	507, 430
Mississippi	1, 537, 618	200	307, 523, 600	661, 341
Louisiana	940, 218	215	202, 146, 870	434, 724
Texas	914, 269	220	201, 139, 180	432, 557
Arkansas	693, 512	170	117, 897, 040	253, 542
Tennessee	518, 605	190	98, 534, 950	211, 903
Total	8, 482, 905	188. 7	1, 600, 816, 316	3, 442, 612

The yield per acre is based upon the aggregate gross weight in

pounds of the total number of bales of cotton produced in each county, divided by the number of acres cultivated, and includes all for which the grower was paid—cotton, bagging and ties.

The following extracts from correspondence will illustrate local conditions of this crop:

VIRGINIA.—*Prince George:* Cotton largely substituted for pea-nuts; has not answered expectations. *Southampton:* Shortened by drought, but fine; 11,550 pounds seed-cotton yielded 3,993 of lint.

NORTH CAROLINA.—*Chowan:* Reduced by drought and rust beyond all expectation. *Bladen:* Yield below last year, but increased acreage may bring up the aggregate. *Currituck:* Slightly damaged by rust. *Pasquotank:* Yield one-third short. *Greene:* Crop shortened by several causes; many top-bolls did not open. *Marlborough:* Yield after all deductions about equal to last year, with 10 per cent. more acreage; killing frost October 12 and 13, a month earlier than last year. *Gaston:* Our high hopes fully realized. *Mecklenburgh:* Better than expected, though early frost was injurious. *Moore:* Four-fifths picked and one-half marketed; fine picking season. *Cumberland:* Acreage and yield increased 5 per cent. each; scarcity of hands; frost and rains render much of the later crop yellow or stained. *Franklin:* Not so good as was expected, but increased acreage will probably bring up the aggregate of last year. *Sampson:* Much cotton unpicked for lack of hands. *Perquimans:* Acreage double, making the product 40 per cent. greater than last year. Cotton gathered before late rains yielded 175 pounds per acre; that gathered since only 125 pounds. *Wake:* Crop better than was expected though late bolls dried up. *Stanley:* Short over one-fifth; plants were loaded with green bolls October 15, and utterly destroyed by frost. *Edgecombe:* Acreage 20 per cent. short and quality reduced 5 per cent., but it is thought the actual yield will be equal to last year. Caterpillars appeared in several places August 18, and did much damage. *Onslow:* Late plantings cut down one-half. *Alexander:* Acreage small but increased; greater average yield per acre.

SOUTH CAROLINA.—*Clarendon:* Nearly all gathered in good order; about one-fourth still standing, which will be injured by the rain now falling. *Greenville:* Planters expected 25 cents a pound, but got only 14 to 16 cents; many badly in debt for provisions, &c. *Fairfield:* Prospect greatly declined since August; heat and drought, with cold nights, cut short the late bolls except on moist lands, and these were taken by a heavy frost October 14. Still the aggregate yield will be above that of 1871. *Chester:* A third of the crop still ungathered and wasting. *Lexington:* Crop matured earlier than ever before, and has been more closely picked; quality fine, gathered before frost; nearly all ready for market. *Newberry:* Fine weather for picking, which is much earlier than usual, securing a finer quality of cotton. *Barnwell:* Late crops frosted. *Orangeburgh:* Nearly all gathered, cut short by worms and early frost. *Richland:* Better than last year.

GEORGIA.—*Dooly:* Shortened by drought. *Muscogee:* Shortened by rust, extremes of drought and wet, and caterpillars; in many places very poor. *McDuffie:* Good picking season. *Oglethorpe:* Crop opened and gathered with unexampled rapidity, owing, probably, to dry fall and copious use of fertilizers. *Cobb:* Season good and crop 50 per cent. above average. *Lee:* Last picking unexpectedly poor; crop will make a bale to seven acres. *Walton:* Above average; best since 1860. *Brooks:* Nearly gathered; best crop for years. *Greene:* Large number of bolls frost-killed. *Macon:* Below average. *Twiggs:* Crop will average probably 112 pounds lint per acre. *Clayton:* Seriously injured by early frost. *Chattooga:* Unmatured bolls injured by frost in October. *Wilkes:* Has done much better than was expected; fine picking weather. *Putnam:* Better than last reported; caterpillars too late to do much damage. *Fayette:* Materially injured by frost October 15; four-fifths gathered. *Clay:* Better than last report. *Liberty:* Injured by caterpillars; good weather for picking. *Pike:* Drought in May prevented cotton from coming up in time to escape frost. *Newton:* Frost disastrous to cotton, especially to late plantings on bottom-lands. *Whitfield:* Yield and quality good.

FLORIDA.—*Columbia:* Sea-island cotton injured 20 per cent. by drought and caterpillars. *Gadsden:* Half an average. *Suwannee:* Cotton all in on account of caterpillars.

ALABAMA.—*Walker:* Crop would have exceeded that of last year but for the cotton caterpillar, which cut it off one-third; average increased. *Colbert:* Crop will exceed last year's in spite of drought and army-worm, but the quality will be depreciated; picking slow; much will be left in the field; better cultivation than formerly. *Chambers:* Would have exceeded last year's crop but for caterpillars and early frost, October 14; yield equal to last year. *Montgomery:* Full average; 10 per cent. better than last year; market quality of crop above average; 150 pounds lint per acre. *Crenshaw:* Cut off by worm, rust, and drought; gathered a month or six weeks early. *Macon:* Planters disappointed by the yield; fine picking season. *Lawrence:* Probably above average; quality excellent; good picking season. *Tuscaloosa:* Poor crop; drought

prematurely opened the bolls left by the caterpillar. *Randolph:* Half crop; better where guano was used.

MISSISSIPPI.—*Yazoo:* Yield probably equal to last year. *Jasper:* Spring drought injured crops on black land. *Warren:* Prospects of the crop improved by fine picking season. *Grenada:* The crop not much injured by the severe drought. *Rankin:* Good season; crop from 100 to 400 pounds per acre. *Tishemingo:* Fine picking season enhanced the yield. *De Soto:* Better than was expected. *Yalabusha:* Fine weather maturing all the bolls. *Coahoma:* Suffered from spring rain, summer drought, and slovenly cultivation; matures six weeks earlier than usual, and too rapidly to be well gathered. *Hinds:* Dry fall enhanced the yield. *Wayne:* Cut short by drought, boll-worm, and caterpillar. *Kemper:* Shortened by drought and caterpillars. *Winston:* Early bottom crops good, but late plantings and upland plantings poor. *Holmes:* Fine picking season; crop short, but yields lint in large proportion and of superior quality. *Jefferson:* Yield larger than last year.

LOUISIANA.—*Tangipahoa:* Short crop. *Madison:* Damaged by worms and drought; fine picking weather increased the yield 10 per cent. *Franklin:* Shortened by drought and caterpillars, but better than was anticipated; average yield, 200 pounds of lint per acre. *East Baton Rouge:* The most favorable picking season ever known, bringing the yield up to last year's. *Morehouse:* Fine weather improved the crop 25 per cent. *Carroll:* Prospect improved; but little will be lost. *Claiborne:* Three-fourths of a crop well housed.

TEXAS.—*Henderson:* Nearly all gathered. *Craven:* Three-fourths average; shortened by frost. *Rusk:* Mostly gathered; yield 70 pounds lint on uplands, and 120 on bottoms. *Red River:* Lint heavy in prairie and bottom crops; light on sandy soils, reducing the average; yield good. *Upshur:* Larger proportion of lint; crop one-fourth less than last year. *Kaufman:* Better than was expected; most upland classed as good ordinary; yield per acre less than last year, but the acreage is nearly double. *Marion:* Less than half a crop; averages 100 pounds lint per acre. *Dallas:* Quality unusually fine. *Burnet:* Shortened one-half by drought. *Fayette:* All the river-lands well cultivated and early sown with the "Early Prolific" cotton-seed averaged 500 pounds lint per acre; uplands average about 300. *Gonzales:* Drought arrested the ravages of the worm, and the fine open fall enabled farmers to gather the whole crop; some made a bale per acre; whole crop averages half a bale. *Bosque:* Drought shortened the crop from 500 to 300 pounds per acre. *Austin:* Yield better than was expected. *Burleson:* Unusual proportion of lint—about a third of the whole; free from dirt and trash.

ARKANSAS.—*Fulton:* Injured by drought. *Craighead:* Marketed earlier than last year. *Pulaski:* Improved a little. *Jackson:* Shortened by drought in July and August. *Bradley:* Injured by drought. *Monroe:* Damaged by drought more seriously than was supposed. *Montgomery:* Shortened by drought.

TENNESSEE.—*Gibson:* Acreage increased; yield shortened by drought. *Madison:* A bale to 4 acres. *Dyer:* Acreage increased, but yield per acre diminished. *Lincoln:* Yield average; quality excellent. *Hardin:* Better quality than was expected. *Giles:* Yield better than was expected; many crops range from 1,000 to 1,500 pounds seed-cotton per acre.

KENTUCKY.—*Russell:* Small patch produced 600 pounds per acre.

POTATOES.

The returns of correspondents point to a decrease of 5 per cent. from the product of last year, amounting to about six millions of bushels. The Western States, in which this crop has suffered for several years from the ravages of the Colorado beetle, report diminishing losses from this cause, and are the only States, North Carolina and Texas excepted, reporting increased production. The averages are as follows: Maine, 65; New Hampshire, 80; Vermont, 86; Massachusetts, 90; Rhode Island, 92; Connecticut, 94; New York, 90; New Jersey, 75; Pennsylvania, 95; Delaware, 75; Maryland, 75; Virginia, 92; North Carolina, 104; South Carolina, 87; Georgia, 89; Florida, 74; Alabama, 94; Mississippi, 94; Louisiana, 85; Texas, 123; Arkansas, 93; Tennessee, 100; West Virginia, 85; Kentucky, 101; Ohio, 90; Michigan, 101; Indiana, 115; Illinois, 135; Wisconsin, 95; Minnesota, 127; Iowa, 109; Missouri, 93; Kansas, 110; Nebraska, 104; California, 109; Oregon, 124.

MAINE.—*York:* Potatoes injured in quantity and quality by excessive moisture, but no rot. *Sagadahoc:* Considerable rot. *Cumberland:* Rotted both before and after digging; price from 50 cents to $1. *Waldo:* Heat and moisture reduce the quantity of

sound potatoes to about one-half of last year. *Somerset:* Half a crop and poor *Aroostook:* Lighter and poorer than common; many rotten tubers.

NEW HAMPSHIRE.—*Hillsborough:* Early planting of good quality, but considerable rot on low-lands. *Stafford:* Reduced in quantity by rust and wet. *Coos:* Light and poor crop.

VERMONT.—*Franklin:* Rotted badly on some soils; acreage and yield both reduced. *Orange:* Early plantings best, but the rot almost universal; not so destructive as in 1846; increased acreage. *Orleans:* Below average and considerably rotted.

MASSACHUSETTS.—*Worcester:* Rotten. *Norfolk:* Crop average in quantity, but depreciated by wet weather. *Berkshire:* Suffered from dry weather in June, rot in September, especially in highly manured soils; Early Rose and Peerless suffered most; other varieties not very greatly injured. *Hampden:* Very much injured by rain.

RHODE ISLAND.—*Washington:* Reduced 10 per cent. in quantity by summer drought; depreciated in quality.

CONNECTICUT.—*New London:* Crop better than last year, though injured by the white and wire worms. *Hartford:* Excessive top-growth impoverished the tubers. *Litchfield:* Not so good as last year.

NEW YORK.—*Rockland:* Below average, but of excellent quality. *Ontario:* Great crop. *Chatauqua:* Below average, but sound and free from rot; 50 cents per bushel. *Erie:* Acreage increased, but yield disappointing diggers; Colorado beetle appeared October 20, eating small potatoes left in the hills. *Warren:* Small crop; injured by white grub; poor in quality. *Genesee:* Quality excellent. *Steuben:* Above the average of several years. *Albany:* Not much over a half crop. *Chemung:* Smaller than usual, owing to late rains. *Columbia:* Poor; badly rotted and worm-eaten. *Seneca:* Late varieties rotted by heavy rains during the digging-season. *Delaware:* Run to vines with few tubers. *Onandaga:* Yield fine, but considerable rot.

NEW JERSEY.—*Warren:* Crop short; quality average. *Burlington:* Poorer in quantity and quality than for several years. *Hudson:* Injured by drought, especially late varieties; Peachblows most injured; Early Rose did well.

PENNSYLVANIA.—*Elk:* Crop poorer than was anticipated; Early Rose and Peerless rotted badly on low lands. *Juniata:* Injured by rain; rotted to some extent. *Wayne:* Rain delayed potato-digging. *Armstrong:* Crop largly run to top, but turns out more tubers than last year, though not so dry or sound. *Crawford:* Not a full crop. *Lancaster:* Three-fourths of a crop and poor. *Lawrence:* The tubers injured by second growth, making them soggy; sweet potatoes better than usual.

DELAWARE.—*Sussex:* Greatly benefited by late rains.

MARYLAND.—*Baltimore:* Much reduced by drought; early planted good; late planted a failure. *Caroline:* Small crop; sweet potatoes good.

VIRGINIA.—*Orange:* Root crops fair; sweet potatoes improved by September rains. *Fluvanna:* Late crops short. *Middlesex:* Late crops suffered from drought; sweet potatoes abundant and fine. *Nelson:* Shortened by drought, but fair compared with last year. *Stafford:* Severely injured by draught. *Madison:* Shortened by drought and bugs; sweet potatoes very fine. *Highland:* Remarkably fine. *King and Queen:* Deficient yield. *Cumberland:* A complete failure. *Prince George:* Almost a failure. *Fauquier:* A failure; sweet potatoes fine. *Fairfax:* Very fine; especially Peach-blows. *Henrico:* Early planted short nearly a half; sweet potatoes very fine. *Gloucester:* A failure; sweet potatoes short. *Southampton:* Suffered from drought, but of excellent quality.

NORTH CAROLINA.—*Bladen:* Sweet potatoes short but good. *Greene:* Sweet potatoes almost a failure; too much rain in the spring, and too dry in summer and fall. *Gaston:* Sweet potatoes abundant and fine. *Mecklenburgh:* Potato crop short. *Alamance:* Both kinds very fine. *Iredell:* Sweet potatoes excellent. *Stanley:* Late crops suffered from drought. *Onslow:* Very poor; not over a half-crop.

SOUTH CAROLINA.—*Clarendon:* Injured by drought. *Orangeburgh:* Shortened by drought. *Newberry:* Almost a failure.

GEORGIA.—*Worth:* Injured by drought. *Dooly:* Short. *Muscogee:* Inferior. *McDuffie:* Best crop for years. *Lee:* Injured by drought and frost. *Marion:* Sweet potatoes cut off by late drought. *Hancock:* Sweet potatoes a complete failure from drought. *Wilkes:* Sweet potatoes greatly injured by drought. *Whitfield:* Cut off by drought. *Decatur:* Short and poor. *Liberty:* Diseased by drought. *Schley:* Sweet potatoes 50 per cent. short.

FLORIDA.—*Taylor:* Twenty per cent. above average. *Columbia:* Sweet potatoes shortened by drought. *Leon:* Injured by drought in September and October.

ALABAMA.—*Walker:* Sweet potatoes not so good as last year. *Colbert:* Potatoes average; sweet potatoes failed for lack of rain at the right time. *Montgomery:* Short but good. *Tuscaloosa:* Sweet potatoes unusually poor, both in yield and quality. *Calhoun:* Injured by drought. *Randolph:* Good yield in spite of drought, and good quality.

MISSISSIPPI.—*Tishemingo:* Sweet potatoes small and scarce. *Williamson:* Shortened

by drought, but good. *Wayne:* Sweet potatoes injured by drought. *Kemper:* Sweet-potato crop light. *Jefferson:* Crop small, but good.

LOUISIANA.—*Tangipahoa:* Sweet potatoes shortened by drought. *Franklin:* Both kinds cut short two-thirds by drought. *Lafourche:* Sweet potatoes promise finely; acreage comparatively small. *Carroll:* Short but good.

TEXAS.—*Ellis:* No crop made; not 100 bushels in the county. *Austin:* Good sweet potatoes; half a crop. *Coryell:* Entire failure. *Marion:* Sweet potatoes a complete failure. *Kaufman:* Almost a failure. *Colton:* Deficiency of sweet potatoes, due to scarcity of seed in the spring. *Travis:* Almost a failure. *Rusk:* Cut short by drought. *Craven:* Sweet potatoes fallen to a good average.

ARKANSAS.—*Fulton:* Sweet potatoes injured by drought. *Crittenden:* Sweet potatoes injured by drought. *Bradley:* Injured by drought. *Washington:* Sweet potatoes injured by drought.

TENNESSEE.—*Jackson:* Both kinds damaged by drought. *Blount:* Injured by drought. *Gibson:* Better than for many years; sweet potatoes light. *Rhea:* Not so good. *Lincoln:* Both kinds poor. *Bradley:* Late crops a failure; sweet potatoes fair. *Bedford:* Short and not so good. *Monroe:* Both kinds reduced by drought.

WEST VIRGINIA.—*Tyler:* A great failure, both in product and quality. *Jefferson:* Both kinds greatly improved by a favorable late season and the delay of frost. *Doddridge:* Injured by drought. *Brooke:* Not over a half crop; price $1 per bushel. *Braxton:* Good in quality and quantity. *Pocahontas:* Large and good crop.

KENTUCKY.—*McLean:* Early potatoes good; late are short; sweet potatoes, average. *Livingston:* Not one-half a stand. *Lewis:* Late crop short and indifferent. *Graves:* Damaged by drought. *Anderson:* Affected by drought to some extent.

OHIO.—*Athens:* Crop nearly destroyed by drought and Colorado beetles. *Darke:* Average with last year; sweet potatoes not so good as usual. *Logan:* Increased acreage and product. *Fulton:* Good crop. *Tuscarawas:* Late crop injured by Colorado beetles; early crop fair. *Lucas:* Some fields injured by blight taking the vines and stopping the growth of the tubers. *Pickaway:* Injured by drought. *Morrow:* Tolerable; some second-growth; bring 50 cents per bushel. *Morgan:* Badly injured by potato-bugs. *Meigs:* Below average; Colorado beetles. *Licking:* Late potatoes light. *Hancock:* Average, but some second-growth. *Delaware:* Yield enormous, but quality not first rate. *Crawford:* Average; sweet potatoes but little cultivated. *Coshocton:* Early planted, average; later ones injured by bugs. *Butler:* Acreage and aggregate yield reduced. *Ashland:* Materially shortened by bugs; but 10 per cent. above last year. *Brown:* Generally good.

MICHIGAN.—*Washtenaw:* Some fields destroyed by Colorado beetles; sweet potatoes unusually abundant and fine. *Van Buren:* Affected by drought. *Ottawa:* Crop injured by early drought and by excess of rain in September. *Lenawee:* Light and poor through drought. *Jackson:* Crop good till September 1, when the Colorado beetle becomes very troublesome. *Clinton:* Injured by Colorado potato-beetles. *Antrim:* Injured by a long, black bug, and by the Colorado bug. *Van Buren:* Mostly small.

INDIANA.—*Perry:* One-third of a crop. *Noble:* Late crop good. *Marion:* Suffered from drought early in the season; Colorado beetle destructive of late crops. *Madison:* Good; sweet potatoes deficient through drought. *Lagrange:* Late potatoes have grown since August 20, the rains then enabling them to get ahead of the potato-bugs; they have, in consequence of the delay, not well ripened. *Gibson:* Early Rose very good; Colorado bugs less numerous than last year. *Decatur:* Imperfectly cultivated; bugs trimmed the vines, but seasonable rains kept them growing. *Steuben:* Improved crop of potatoes in consequence of decrease of Colorado beetles. *Clay:* Injured by wet July and dry fall. *Scott:* Early potatoes good; later crops damaged by drought. *Franklin:* Sound; no rot, and but slightly injured by Colorado bugs; 45 to 60 cents per bushel.

ILLINOIS.—Early planted did well; late crops mostly destroyed by bugs. *Whiteside:* Extra heavy yield and good condition, 25 cents per bushel. *Winnebago:* Potato-bugs gradually disappeared, leaving the crop to mature well. *Tazewell:* Good yield and quality. *Saint Clair:* Unusually abundant and good. *Stephenson:* Excellent. *Putnam:* Seasonable rains enabled potatoes to survive the ravages of the bugs after their disappearance. *Pulaski:* Average cut down by frost. *Pope:* Shortened by drought and frost. *Ogle:* Improved both in quantity and quality. *Knox:* Sweet potatoes have had an unparalleled season of growth; they seem like the product of the Carolinas. *Cook:* All the potatoes saved from the bug are saved at great cost. *Bureau:* Finest crop for many years. *Cass:* Good season; bugs disappeared. *Franklin:* Late crops destroyed by drought. *Lee:* Good potato-season. *Mason:* Good in quantity and quality. *Fayette:* Both kinds abundant. *Clark:* Good potato-season and no bugs.

WISCONSIN.—*La Fayette:* Fine potato-season. *Fon du Lac:* Light crop, through drought. *Saint Croix:* Rot in some places; good in all wet lands. *Pierce:* Some rot. *Outagamie:* Injured by bugs more than was supposed.

KANSAS.—*Woodson:* Unprecedented crop and consequent low prices. *Washington:* Plenty and good. *Lyon:* Both sorts would have been excellent if the frost had

delayed two weeks. *Jefferson:* Crop not so large as was expected, but of very fine quality. *Crawford:* Potatoes fine. *Osage:* Very large potatoes and of excellent quality. *Republic:* Damaged by bugs; sweet potatoes good. *Coffee:* Good and well saved. *Miami:* Stored in good order.

MINNESOTA.—*Steele:* The great enemy of the potato has left us; crop an old-fashioned big one. *Wright:* Too heavy to pay for digging.

IOWA.—*Tama:* Tendency to rot. *Muscatine:* Fine crop but low prices—15 to 20 cents per bushel; sweet potatoes becoming an important crop. *Marion:* Abundant, but inferior in quality. *Lucas:* Shortened by warm dry weather. *Lee:* Late crops short through drought. *Hardin:* Seriously cut down by Colorado beetles for seven years, but this year they escaped. Tycks seedling bug-proof.

MISSOURI.—*Schuyler:* Superior. *Phelps:* Early crop good; late shortened by drought. *Linn:* Crop large and fine, but no market. *Greene:* Late crop inferior; hot weather of August killed the vines. *Chariton:* Cut-worms swept sweet-potatoes; nearly all the first planting destroyed. *Cass:* Good; late crops short but early ones plentiful. *Caldwell:* Excellent and well saved. *Cape Girardeau:* Early potatoes good; late a failure. *Franklin:* Early Rose and Goodrich of good quality; late potatoes small. *Lane:* Sweet potatoes a poor crop.

NEBRASKA.—*Thayer:* Entirely destroyed by blister-fly or potato-bug. *Nemaha:* Shortened by drought in the latter part of the season. *Washington:* Superior yield and quality. *Cass:* Good, though shortened by the beetle.

CALIFORNIA.—*San Bernardino:* Good, and bring fair prices. *Sonoma:* Fully equal to any previous crop; ninety cents per bushel; sweet potatoes very abundant and cheap; forty-five cents per bushel; but when cooked are watery and deficient in sweetness. *Plumas:* Excellent.

OREGON.—*Linn:* Enlarged and improved crop. *Grant:* Unusually fine; best varieties Early Rose, Goodrich, and Snowball. *Douglas:* Inferior in quality. *Clatsop:* More or less affected with rot. *Clackamas:* Frequent rains have brought out the crop very finely. *Columbia:* Potato-rot general, affecting 10 per cent. of the crop; it is feared that the sound potatoes will rot after digging.

UTAH.—*Morgan:* Large crop; forty cents per bushel. *Kane:* Crop injured, by rains breaking the irrigating-ditches.

COLORADO.—*Laramie:* Unaccountably poor.

DAKOTA.—*Bonhomme:* Crop large and fine.

HAY.

A small increase is indicated over the crop of last year. The abundant rains of June and July, in New England, assured a large crop, which was of good quality, except when injured in making by wet weather. An increased yield was obtained in New York and Pennsylvania, in the Middle States, in South Carolina, Texas, and Arkansas, in the South, and in all the Western States except Ohio. The aggregate of the crop will probably be about 24,000,000 tons.

WINTER-GRAIN.

From notes of correspondence on the seeding and early growth of winter-grain, it appears that drought has somewhat retarded seeding in the South and West; that the seed is slow in starting, generally small in size, yet healthy in appearance. West of the Missouri, where winter-wheat is planted, the young crop is more promising than in States east of the Missouri. In all parts of the country, however, where the soil is kept in good tilth, the plant is flourishing. In the compacted, undrained soils, where drought is so injurious at seeding-time, we shall hear in the spring of "freezing out" and a sickly growth of that which retains any vitality. So far there is nothing to indicate anything materially better or worse than an average condition of the crop in autumn, the usual local complaints of drought, fly, and chinch-bug prevailing, as seen in the following desultory extracts:

PENNSYLVANIA.—*Cumberland:* More promising than for many years. *Lancaster:* Wheat lately sown, is declining in condition under the influence of the weather; pros-

pect poor. *Cambria:* Growing crops protected by a fine snow. *Berks:* Horse-disease interfered with plowing and seeding. *York:* Growing crops look remarkably well.

NEW YORK.—*Chemung:* Wheat sown late through scarcity of labor; hence not up to an average. Rye, small crop, planted early, looks well. *Otsego:* Wheat looks well. *Genesee:* Wheat looks well. *Wyoming:* Wheat looks well, but the acreage has been reduced.

MARYLAND.—*Baltimore:* Young wheat growing luxuriantly; autumn favorable; ground well prepared; fertilizers freely used; large acreage of rye, which looks well. *Caroline:* Wheat growth slow and poor; "Ushak Russian Bearded White," two years from the Department, the best variety.

VIRGINIA.—*Warwick:* Newly sown-wheat looks well; has had favorable weather. *Pulaski:* Wheat looks poor; part did not come up well; crippled by drought. *Amelia:* Lack of labor narrowed the area sown. *Frederick:* Early-sown wheat injured by the fly. *Shenandoah:* Early-sown wheat made a fine start, but in many fields was destroyed by the fly; preparation of soil good, but much of the grain put in too late and the season too dry. *Prince George's:* Late fall has brought the wheat to a full average though some of the late seeded looks badly. *Page:* Wheat looks better than last year; more lime and manure used, and less of phosphates; better cultivation; wheat sown before the 15th September has the fly to some extent, but not seriously. *James City:* Wheat early sown and looks finely. *King George:* Wheat looks as well as usual; heavy rains early in November. *Louisa:* Wheat sown late; weather not favorable; hence it does not look so well as usual. *Essex:* Wheat injured by sharp cold weather with high winds.

NORTH CAROLINA.—*Mecklenburgh:* Fine seeding season. *McDowell:* Fine seeding season; twice as much wheat sown as last season. *Moore:* Fall seeding later than usual on account of dry weather. *Clarke:* Early-sown wheat considerably injured by the Hessian fly; wheat not so affected looks well. *Perquimans:* Wheat-culture going backward. *Yadkin:* Early-sown wheat looks well.

SOUTH CAROLINA.—*Greenville:* Wheat sown as late as November 20. *Lexington:* Wheat not all sown, and little of that sown has come up; weather very cold and unfavorable to early growth. *Chesterfield:* Seeding backward.

GEORGIA.—*Forsyth:* Wheat-seeding late. *Cobb:* Wheat generally sown on cotton-land, and hence not yet out of the ground.

FLORIDA.—*Gadsden:* Increased area in oats, with improved preparation of soil.

ALABAMA.—*Colbert:* Much wheat will yet be sown, but the acreage will fall short of last year.

MISSISSIPPI.—*Jasper:* The small amount of winter-grain sown (chiefly oats) was slow in coming up.

TEXAS.—*Dallas:* Rains, early in November, greatly improved the new-sown wheat. *Williamson:* Average of winter-grain resticted by drought. *Bosque:* Wheat coming up badly through the dry and cloddy ground in spite of extra pains in putting in the crop. *Blanco:* Sowing of grain restricted on account of the presence of immense swarms of grasshoppers.

ARKANSAS.—*Fulton:* Wheat late sown; drought restrained its germination.

TENNESSEE.—*Putnam:* Wheat sown late on account of dry weather; but little of it up yet. *Smith:* Wheat-sowing tedious; early sown looks well. *Loudon:* Long fall drought delayed wheat-sowing and cold weather has kept it from coming up. *Greene:* Winter-wheat small, but of good color. *Hancock:* Wheat but little affected by the severe cold. *Calhoun:* Wheat put in better than usual. *Lincoln:* Wheat unusually small owing to the dry fall and cold November. *Robertson:* Wheat-growth retarded by drought.

WEST VIRGINIA.—*Jefferson:* Wheat acreage increased and sown earlier, with better preparation of soil; fly injurious until checked by frost October 20; four weeks of warm rains, followed by pleasant weather, have nearly cleaned out the insect. *Berkeley:* Some complaint of fly in wheat, but damage not serious.

KENTUCKY.—*Butler:* Wheat injured by drought. *Fayette:* Weather hard on small grain. *Graves:* Wheat and rye slow in coming up, drought damaging them. *Laurel:* Wheat-seeding unusually late, drought having delayed plowing. *Nicholas:* Drought has injured the newly-sown wheat, which is coming up badly; springs and wells failing; some very cold weather in November. *Lincoln:* Wheat and rye injured by dry, cold weather. *McLean:* Wheat injured by drought and cold. *Mercer:* Fall grain injured by drought and cold; seeding late. *Ohio:* Dry weather unfavorable to wheat.

OHIO.—*Miami:* Wheat looks bad for lack of rain; some fields hurt by fly. *Adams:* Growing crop thicker and stronger through fine growing weather; ground covered with snow. *Mercer:* Wheat suffering from some unknown insect. *Vinton:* Wheat and rye sown in good season, but the ground too dry for its rapid vegetation; much of it did not come up; that which came up early was injured badly by the fly. *Putnam:* Growing wheat looks poor; some fields half destroyed by the wire-worm. *Coshocton:* Acreage of wheat reduced by lack of good seed, but the prospects of the crops and character of cultivation in advance of last year. *Marion:* Winter-sown looks well.

Crawford: Wheat and rye generally look well. *Fairfield:* Wheat came up irregularly owing to drought, which also prevented many fields from being seeded. *Shelby:* Wheat has suffered much from drought in November.

MICHIGAN.—*Livingston:* Low condition of wheat is due to extreme drought; the ground has never been so thoroughly dry; has not been thoroughly wet for two years. *Montcalm:* Wheat looks well. *Washtenaw:* Winter-grain looks well.

INDIANA.—*Decatur:* Wheat looks well; acreage probably above the average. *Perry:* Very dry and unusually cold for November, injuring the wheat. *Owen:* Winter-wheat needs rain badly. *Brown:* Sowed rather late, but looks reasonably well. *Morgan:* Wheat looks well; increased acreage. *Miami:* Wheat looked bad even when early winter set in; Wabash frozen over and crossed by teams; but little snow yet. *Boone:* Wheat supposed to be injured by insects and drought. *Hamilton:* Small through drought; some complaint of insects. *Jennings:* Wheat looks badly; chinch-bug and fly eating it up. *Marion:* Wheat-growth retarded by drought and cold. *Saint Joseph:* Soil generally in good order for wheat; better cultivation; yield reduced 5 per cent. on clay soils by the grub and on sandy soils by the Hessian fly. *Warren:* Wheat looks killed; ground frozen 4 inches. *Hancock:* Wheat looks well; increased acreage. *Pike:* Wheat will be injured by the weather.

ILLINOIS.—*Tazewell:* Newly sown grain affected by drought and cold; rain much needed. *Wabash:* Drought injuring the growing wheat. *DeKalb:* Wheat and rye look extremely well, owing to good tilth of soil, fine weather at seeding, and growing rains since. *Jersey:* Wheat injured by drought; in many places but little to be seen. *Lawrence:* Wheat suffering from drought and hard freezing; very poor prospect. *Champaign:* Wheat seriously threatened with winter-killing. *Schuyler:* Wheat materially damaged by the unprecedented drought and cold. *Cass:* Wheat looks poorly; slow coming up; too short growth to stand the hard freezing of winter. *Fayette:* Injured by drought and cold. *McLean:* Early sown wheat looks 200 per cent. better than last year. *Sangamon:* Dry weather and hard freezes have injured the fall grain. *Washington:* Wheat looks well, but is threatened by drought and cold.

MISSOURI.—*Perry:* Wheat injured by excessive drought; barley has failed the last two years; but little sown. *Laclede:* Drought makes wheat and rye look poor. *Cass:* Season too dry for winter-grains. *Charlton:* Wheat very promising. *Wayne:* Drought has limited the acreage of wheat and prevented it from coming up very well. *Audrain:* Too dry for seeding. *Jefferson:* Wheat-sowing retarded by drought. *Crawford:* Drought delayed wheat-seeding, and consequently but little is yet out of the ground; prospect not flattering. *Cedar:* Cold dry weather threatens to injure wheat. *Greene:* Wheat injured by drought. *Mississippi:* Wheat injured by the unprecedented drought. *Moniteau:* Wheat has come up badly, but better than last year; prospect poor. *Newton:* Checked by six weeks of drought.

KANSAS.—*Marshall:* Wheat looks remarkably well. *Ellsworth:* Wheat promising; rye sown for grazing. *Nemaha:* Wheat very encouraging. *Franklin:* Average, but threatened with drought. *Montgomery:* Increased average; looks well.

NEBRASKA.—*Madison:* Prospect good for a small crop of winter-wheat. *Merrick:* White Touzelle wheat from the Department, sown September 30, looks finely. *Nemaha:* Wheat sown late on account of drought; much of it has not come up. *Osage:* Winter-grain injured by drought and cold.

OREGON.—*Clackamas:* Late-sown grain injured to some extent by excessive cold, the coldest weather for a quarter century. *Lane:* Early rains placed the ground in fine order for fall seeding; prospects better than for several years.

UTAH.—*Cache:* No winter-wheat sown; too dry to plow.

Table showing the average yield per acre and price of the principal crops of the United States for 1872, and the area and condition of winter-grain.

States.	CORN.		WHEAT.		RYE.		OATS.		BARLEY.		BUCKWHEAT.		POTATOES, (Solanum tuberosum.)	
	Average yield per acre in 1872, stated in bushels.	Average price per bushel on 1st day of December, 1872.	Average yield per acre in 1872, stated in bushels.	Average price per bushel on 1st day of December, 1872.	Average yield per acre in 1872, stated in bushels.	Average price per bushel on 1st day of December, 1872.	Average yield per acre in 1872, stated in bushels.	Average price per bushel on 1st day of December, 1872.	Average yield per acre in 1872, stated in bushels.	Average price per bushel on 1st day of December, 1872.	Average yield per acre in 1872, stated in bushels.	Average price per bushel on 1st day of December, 1872.	Average yield per acre in 1872, stated in bushels.	Average price per bushel on 1st day of December, 1872.
Maine	36.1	$0 94	17.3	$1 92	18.1	$1 09	29.5	$0 50	20.6	$0 83	25.5	$0 65	94	$0 68
New Hampshire	38.2	95	18.1	1 84	19.5	1 04	33	59	27.5	92	20	57	94	87
Vermont	38	84	16	1 74	17.7	1 13	35.2	48	24	86	18.7	64	107	53
Massachusetts	31	90	17.4	1 95	18.8	1 03	30.4	61	22.8	76	14.2	90	102	88
Rhode Island	31	90			15.3	98	35.6	50	28	90			90	90
Connecticut	32.2	92	17	1 65	16.8	1 10	35.8	61			19.2	96	106	82
New York	37.5	70	12.5	1 65	13	89	35	44	23	81	16	83	88	63
New Jersey	39.5	62	13.5	1 73	13.8	88	28.4	48			17.4	1 00	98	87
Pennsylvania	39	60	11.2	1 67	13.4	86	33.5	43	21.2	88	16.6	93	99	63
Delaware	20	55	7.5	1 60	7.5	82	14	42			20	90	80	1 00
Maryland	23	57	8.5	1 68	11.6	79	16.5	40			19.7	80	53	88
Virginia	19	58	9	1 56	9.5	72	13.5	46			13.5	62	58	72
North Carolina	14.5	62	8.5	1 53	8.4	93	17.5	80			19.1	69	103	70
South Carolina	10.5	96	6.4	1 88	6.2	1 48	8	80					58	1 00
Georgia	13	86	9	1 73	10.2	1 56	11.5	83					83	1 27
Florida	9.6	1 20					11.2	93					102	1 87
Alabama	17.6	78	9.5	1 48	11	1 28	13.5	82					68	1 15
Mississippi	17.5	88	10.3	1 57	9	1 75	13	1 06					85	1 16
Louisiana	20.1	88					19.5	1 32					61	87
Texas	28.5	43	18.5	1 65	21	1 38	32.5	81	25	1 00			124	1 89
Arkansas	24.3	73	10.4	1 52	12.5	1 50	25.5	64					78	1 02
Tennessee	24	48	10.5	1 40	11.4	88	19.6	42					76	57
West Virginia	28.5	55	10.3	1 43	13.5	88	26.2	38	11.5	95	13.4	88	75	60
Kentucky	33.5	37	12	1 29	14.5	73	25.1	49	22	73			93	58
Ohio	39.5	34	11.7	1 42	11.9	73	30	29	23.2	71	13.5	94	72	63
Michigan	36	43	15.5	1 46	14	74	30	32	24.1	81	16.5	76	66	63
Indiana	39.6	29	13	1 32	15.5	65	30.5	25	24	69	19.2	85	75	54
Illinois	39.8	24	13.2	1 23	18.2	50	36.6	19	26.1	55	15	81	85	46
Wisconsin	38	40	15.8	1 03	18.7	57	33.5	32	28.6	57	16.5	60	92	44
Minnesota	35.2	36	18.7	83	19	49	37.5	26	26.7	42	16.1	90	130	26
Iowa	40.8	18	13.7	85	19.5	47	39	16	27.9	42	20.1	69	133	22
Missouri	37	32	10.6	1 41	16	71	33.7	23	23	73	18.9	76	90	50
Kansas	38.5	22	12.6	1 42	18.5	71	32.5	22	28.2	60	19.4	90	95	42
Nebraska	39	18	17.5	78	21.5	40	40	16	31.6	39	27.1	71	120	28
California	40.5	1 00	18.5	1 11	29.1	1 02	38.5	74	22	85	21	1 11	100	1 13
Oregon	29	93	18.2	74	23.2	73	28.2	51	24.6	60	18.6	83	113	55

Table showing the average yield per acre and price of the principal crops, &c.—Continued.

States.	POTATOES, (Batatus edulis, sweet.)		LEAF-TOBACCO.		HAY.		SORGHUM MOLASSES.		WINTER-WHEAT.		WINTER-RYE.		WINTER-BARLEY.	
	Average yield per acre in 1872, stated in bushels.	Average price per bushel on 1st day of December, 1872.	Average yield per acre in 1872, stated in pounds.	Average price per pound on 1st day of December, 1872.	Average yield per acre in 1872, stated in tons and hundredths.	Average price per ton on 1st day of December, 1872.	Average yield per acre in 1872, stated in gallons.	Average price per gallon on 1st day of December, 1872.	Average am't sown compared with 1871.	Condition of the crop compared with an average.	Average am't sown compared with 1871.	Condition of the crop compared with an average.	Average am't sown compared with 1871.	Condition of the crop compared with an average.
Maine					.92	$12 80			80	100	92	101		
New Hampshire					1.02	14 66			100	110	98	102		
Vermont					1.16	13 00			106	113	104	111		
Massachusetts			1,750	$0 29.5	1.12	21 37			102	106	91	105		
Rhode Island					1.08	32 50					90	110		
Connecticut			1,650	32.8	1.13	26 05			100	105	100	105		
New York			1,033	9	1.25	18 60			99	103	98	101	95	101
New Jersey	85	$1 13			1.15	31 60			102	97	98	101		
Pennsylvania	70	95	1,300	14.6	1.12	22 84			101	100	100	101	86	98
Delaware	95	87			.75	30 00			100	110	107	105		
Maryland	88	94	600	10	.70	32 87	80	$0 62	100	100	106	100		
Virginia	71	70	750	10.4	.92	21 25	84	55	107	97	94	93		
North Carolina	115	49	666	10	1.30	14 15	78	56	102	96	96	100		
South Carolina	50	76			1	36 00			107	101	101	100		
Georgia	88	64	500	17.8	1.57	25 31	89	54	100	102	100	101	89	100
Florida	121	70												
Alabama	56	77			1	18 33	67	58	97	96	92	91		
Mississippi	70	72			1.30	24 14	84	71	99	97	111	100		
Louisiana	77	85			1	23 33								
Texas	79	1 19			1.13	13 52	95	78	128	102	104	100	115	100
Arkansas	92	80	950	16.6	1.26	20 00	87	60	115	96	115	102		
Tennessee	70	70	748	11.7	1.21	15 46	105	54	103	96	101	96	100	105
West Virginia	77	1 30	575	10.9	.92	16 57	91	65	104	104	98	101		
Kentucky	77	92	775	8.4	1.32	13 09	91	53	112	95	99	97	83	100
Ohio	84	1 16	1,050	8.1	1.07	14 43	85	60	106	94	92	96	93	87
Michigan					1.25	12 26	101	76	110	105	101	108	100	100
Indiana	84	1 07	716	7	1.24	12 53	88	56	106	97	99	99	93	97
Illinois	76	89	850	8.5	1.45	9 47	96	55	112	56	101	102	99	95
Wisconsin			1,025	8.6	1.26	9 82			133	101	103	90	108	100
Minnesota					1.35	5 67	87	72	131	103	104	84		
Iowa	125	1 41			1.35	6 07	98	54	95	101	97	100		
Missouri	97	93	1,069	9.5	1.20	9 73	113	48	105	91	96	93	89	87
Kansas	121	93			1.35	3 89	106	50	161	112	136	112		
Nebraska					1.40	3 81	141	57	135	104	88	106		
California	172	94			1.44	15 60			125	108	108	100	115	104
Oregon					1.35	17 25			89	98	95	85		

Table showing the condition of the crops, &c., on the 1st day of November, 1872.

States.	CORN.		POTATOES, (Solanum tuberosum.)		POTATOES, (Batatus edulis, sweet.)		TOBACCO.		HAY.		BEANS.
	Product compared with last year.	Average quality compared with last year.	Product compared with last year.	Average quality compared with last year.	Product compared with last year.	Average quality compared with last year.	Product compared with last year.	Average quality compared with last year.	Product compared with last year.	Average quality compared with last year.	Product compared with last year.
Maine	113	110	65	71	.....	.....	.....	.....	170	101	120
New Hampshire	108	112	80	79	.....	.....	.....	.....	123	92	102
Vermont	114	116	86	82	.....	.....	.....	.....	118	90	90
Massachusetts	103	97	90	87	.....	.....	122	84	115	96	95
Rhode Island	96	98	92	91	.....	.....	.....	.....	107	101	100
Connecticut	105	102	94	92	.....	.....	102	101	130	100	101
New York	110	106	90	96	.....	.....	115	110	107	97	100
New Jersey	120	106	75	85	88	91	.....	.....	90	96	100
Pennsylvania	115	100	95	92	100	95	125	102	102	98	103
Delaware	92	100	75	82	80	100	.....	.....	65	85	100
Maryland	98	98	75	95	99	101	102	90	70	98	91
Virginia	93	99	92	91	90	95	102	98	70	95	90
North Carolina	116	102	104	99	99	101	120	103	108	114	108
South Carolina	108	107	87	99	73	80	102	105	94	105	85
Georgia	118	109	89	92	80	91	113	106	98	101	110
Florida	87	97	74	83	94	98	.....	.....	75	100	.....
Alabama	123	112	94	90	84	90	.....	.....	70	100	100
Mississippi	120	111	94	94	79	89	.....	.....	80	85	95
Louisiana	130	117	85	90	69	78	.....	.....	81	96	.....
Texas	134	115	123	106	72	82	.....	.....	153	96	84
Arkansas	109	98	93	100	80	90	99	101	102	102	.....
Tennessee	102	104	100	97	85	96	100	97	95	93	97
West Virginia	106	103	85	98	101	99	112	104	90	99	104
Kentucky	118	109	101	104	101	101	109	102	110	102	106
Ohio	111	102	90	96	96	98	95	97	90	98	99
Michigan	105	103	101	99	.....	.....	.....	.....	102	102	102
Indiana	108	99	115	105	99	100	94	90	104	98	95
Illinois	107	99	135	104	98	97	115	103	105	97	98
Wisconsin	99	98	95	98	.....	.....	95	99	104	102	95
Minnesota	98	98	127	112	.....	.....	.....	.....	101	97	98
Iowa	103	100	109	102	105	99	.....	.....	102	98	103
Missouri	121	100	93	100	98	100	125	103	111	102	99
Kansas	120	103	110	102	121	99	.....	.....	106	100	103
Nebraska	105	101	104	94	104	105	.....	.....	112	96	100
California	127	102	109	100	125	100	.....	.....	145	103	109
Oregon	105	100	124	106	.....	.....	.....	.....	95	98	106

Condition of the crops, &c., on the 1st day of November, 1872—Continued.

States.	PEASE.	BUCK-WHEAT.	FLAX.	COTTON.		SORGHUM.	SUGAR-CANE, (not sorghum.)	GRAPES.	APPLES.	PEARS.
	Product compared with last year.	Product compared with last year.	Product compared with last year.	Indicated product compared with last year.	Indicated product (lint) per acre, in pounds.	Product compared with last year.	Indicated product compared with last year.	Product compared with an average crop.	Product compared with an average crop.	Product compared with an average crop.
Maine	104	103	.....	.....	.....	.....	.....	91	134	100
New Hampshire	100	82	.....	.....	.....	.....	.....	84	145	90
Vermont	98	102	.....	.....	.....	.....	.....	102	90	101
Massachusetts	87	96	.....	.....	.....	.....	.....	71	145	87
Rhode Island	.....	.....	.....	.....	.....	.....	.....	91	148	116
Connecticut	98	97	.....	.....	.....	.....	.....	82	142	100
New York	94	92	101	.....	.....	.....	.....	91	112	87
New Jersey	98	96	.....	.....	.....	.....	.....	91	175	114
Pennsylvania	101	105	98	.....	.....	92	.....	93	137	107
Delaware	75	100	.....	.....	.....	50	.....	105	160	105
Maryland	97	101	.....	.....	.....	96	.....	108	125	110
Virginia	93	97	101	100	190	87	.....	109	103	100
North Carolina	107	.....	97	121	170	88	.....	105	115	102
South Carolina	92	.....	.....	124	182	97	95	97	86	76
Georgia	114	.....	.....	119	180	98	97	101	91	91
Florida	96	.....	.....	102	125	.....	97	105	.....	.....
Alabama	93	.....	.....	111	167	112	125	95	95	95
Mississippi	83	.....	.....	112	200	82	86	104	81	69
Louisiana	90	.....	.....	121	215	.....	89	81	79	.....
Texas	76	.....	.....	126	220	95	91	95	91	94
Arkansas	77	.....	.....	105	170	75	.....	.....	77	83
Tennessee	97	96	102	110	190	103	.....	111	95	101
West Virginia	99	94	102	.....	.....	82	.....	97	124	98
Kentucky	102	97	100	98	200	100	.....	109	122	115
Ohio	97	96	89	.....	.....	83	.....	92	115	105
Michigan	96	105	.....	.....	.....	86	.....	100	99	92
Indiana	98	108	88	.....	.....	92	.....	111	103	103
Illinois	99	97	96	.....	.....	96	.....	104	99	93
Wisconsin	92	98	.....	.....	.....	115	.....	98	69	63
Minnesota	101	99	104	.....	.....	91	.....	103	109	.....
Iowa	99	107	102	.....	.....	95	.....	117	110	93
Missouri	98	104	95	107	270	93	.....	107	97	92
Kansas	101	109	.....	.....	.....	99	.....	122	120	107
Nebraska	100	99	101	.....	.....	101	.....	119	185	208
California	95	93	.....	.....	.....	.....	.....	95	96	100
Oregon	100	119	.....	.....	.....	.....	.....	100	131	116

EXTRACTS FROM CORRESPONDENCE.

CORN FOR FUEL.

Pottawattamie County, Iowa.—Iowa coal is worth $7 per ton; wood from $6 to $7 per cord, according to quality. People are burning a good deal of corn; think it as cheap at 18 cents per bushels as coal or wood, while it is clean, neat, and handy; no dirty hands and no chopping with dull axes.

Harding County.—We had an immense crop of corn in 1871, and nearly as large in 1872. At the gathering of the last crop there was old corn enough to answer the wants of the country until the harvest of 1873. Thousands upon thousands of bushels that were purchased by dealers and shippers last year have been held over, as there has been no time since the harvest of 1871 when it would pay to shell and ship it. Large quantities are now burned for fuel, as it is thought cheaper to burn at 15 cents per bushel of 75 pounds on the cob, than wood at $5 to $6 per cord. A perpetual or "draw" lime-kiln, running night and day, burned large quantities the past autumn with very satisfactory results as to cost, and an extra quality of lime over that burned with either coal or wood; so the proprietor informed me. I myself sold to him old corn at 20 cents, as preferable to the present crop at 15 cents. He ships to the whole west half of the State, to the Missouri River, and even beyond to Dakota.

UNSEASONABLE WEATHER IN TEXAS.

Nueces County, Texas, December 1.—On the 16th of November we had ice half an inch thick, and on the 17th three-fourths of an inch thick. The winter has commenced five weeks earlier than in 1871. Should the cold weather continue the mortality in cattle will be greater than last year. The cattle are in poorer condition and the grass is shorter, owing to the protracted drought of the past summer.

COSTLY HUNTING.

Prairie County, Arkansas.—The fires following the long drought have devastated the country, the loss in this county being about $150,000. This enormous loss has been caused by hunters from Tennessee and Kentucky setting fire to the woods.

THE TIME TO SOW WHEAT AND CLOVER IN SOUTH CAROLINA.

Greenville County, South Carolina.—Ninety-nine times in a hundred wheat planted here by the 10th of October will yield a good crop by the 10th of June. Clover-seed rolled in at the same time with the wheat will give a crop of stubble-hay after the wheat comes off, better than corn-fodder for cattle. If the land is good the clover, which stands three years, yields a larger profit in hay than can be gained by any other crop. Then clover-sod plowed in and put to corn will give thirty bushels to the acre. Then, with six wagon-loads of barn-yard manure, plowed in, the wheat-crop will be from twelve to fifteen bushels per acre.

EARLY SNOW IN UTAH.

Salt Lake City, Utah Territory, December 1, 1872.—On the 26th of October we had the first snow-storm of the season, which was very severe, lasting from Saturday night to Tuesday noon following. A night of dismal coldness succeeded, and storms and cold weather have prevailed up to the present, with but little cessation. Large quantities of winter-apples have been frozen on the trees, and considerable quantities of carrots and other roots have frozen in the ground. The "oldest inhabitant" of these mountains has never before seen winter set in so early and so severely. Mining and other industries seem almost paralyzed—none expecting and none being prepared to meet the inclemencies of an almost arctic winter while yet a month or more of the fall season remained. Much annoyance and considerable suffering has resulted from the temporary stoppage of the operations at the coal-beds.

AN OVERPLUS OF WHEAT.

Alameda County, California, September 1.—Thousands of sacks of wheat still remain on the field where it was thrashed, there being no place to store it. Granaries and warehouses are full, and not one-half ships enough to take the surplus away. Freight now to Liverpool £5 10*s.* against £2 10*s.* last season. In proportion as freights go up the price of wheat declines. There are needed in San Francisco Bay one hundred more ships than are there to export grain. The high prices of labor, sacks, and freights have about discouraged the farmers, so that they are at present doing but little toward put-

ting in another crop. Many who raised thousands of bushels of grain have not been able to pay their debts and go on another season.

November 1.—Many thousand sacks of wheat still remain in the fields, and along the lines of transportation, awaiting shipment. One hundred vessels have already loaded and cleared for domestic and foreign ports, and when as many more shall have loaded there will still be a large amount of wheat to spare.

FLAX.

Washington County, Nebraska.—For the first time since the settlement of this county flax has been raised very extensively. It is estimated that the product of seed will be nearly, if not quite, 5,000 bushels.

BEET-SUGAR.

Sacramento, California.—The Sacramento Beet-Sugar Factory is now in full operation on this season's crop of beets—a fine yield—turning off the finest of sugars of different grades.

TEXAS CATTLE.

Labette County, Kansas.—I live within two miles of the line of the Indian Nation; I can see daily thousands of Texas cattle, of all ages, looking northward wistfully for the day when the statute says they may "cross the line."

Marion County, Iowa.—Feeders are to a considerable extent compelled to purchase Texas cattle in order to get the number desired. Over two thousand have been purchased and brought into this county. With nearly all the purchasers the stall-feeding of these cattle is as yet an experiment. But as corn is very cheap, there being an immense amount, several of our most enterprising feeders have bought them in lots of from 100 to 300 and are feeding them on corn, costing from 15 to 20 cents per bushel.

TEXAS CATTLE DISEASE.

Saint Louis, Missouri.—We have had the genuine Texas fever in that part of the county lying immediately west of the city. In the vicinity of the cattle-yards on the Pacific Railroad, in the western limits of the city, the city cows took the infection, and about 45 have died. At Rock Spring, a mile and a half further west, I saw in a yard where some 40 dairy cows are driven to be kept over night, two cows dead and several sick. Some 35 cows died in that vicinity. At Cheltenham, two miles further west, I lost one cow, and about 40 others died in the neighborhood of the same disease. Some Texas cattle, supposed to be strays, were in the neighborhood about the middle of August. Three miles further west there have been heavy losses, and the disease is still prevailing. The stray Texas cattle had been there also. I know of a loss of over 200 head in this county. With many of the sick cattle there have been veterinary surgeons, but, as far as I know, without effecting any good. Mr. B. F. Thomas, who has lost seven, has two now sick and says he has cured two with aconite. He has administered this to those now sick, but thinks that, at the time, the disease was too far advanced to admit of a cure by it.

AN ADVERSE SEASON—PREVENTIVE OF MURRAIN.

Powhatan County, Virginia.—The current year has been the most difficult and disastrous to farming and planting operations known to the writer in an experience of forty years. Drought prevailed throughout the whole growing season, shortening the crops of every description, except wheat, from one-fourth to three-fourths of the amount usually raised.

Chills and fevers have prevailed to an unusual extent; also, murrain among cattle, and some valuable animals have been lost. Many in this vicinity recommend a mixture of salt and hickory-ashes, in equal quantities by measure, kept in troughs where the cattle can have free access to it during the hot months, as an unfailing preventive, they having tried it for thirty years with entire success. A quantity of sulphur, equal to one-fourth of the mixture of salt and ashes, added to it, has also been found beneficial.

PEA-NUTS IN TENNESSEE.

Wayne County.—Our farmers have never raised any pea-nuts until this year. They have gone into that crop pretty extensively, and will raise about 60 bushels per acre—little over half a crop, owing to the drought we had the latter part of summer.

GRAPES IN CALIFORNIA.

Amador County.—Grapes are good and plentiful, selling for $12 to $15 per ton, or about 40 cents per bushel; can be raised here cheaper than corn or potatoes in Illinois or any other State.

SILK-CULTURE.

Tooele County, Utah.—Mulberry plantations are doing well; sericulture will soon be in full blast.

LARGE CROPS.

Woodson County, Kansas.—From the best statistics I have been able to obtain, and from my own observation, I estimate that we can spare from this county alone 250,000 bushels of corn and 75,000 bushels of potatoes. Such a crop was never raised here before. What we now want is a market.

Linn County.—The corn-crop is quite large. The increased facilities for cultivating (the double-team corn-plow being now generally used) nearly double the acreage.

Cache County, Utah.—We have raised the largest crops this season ever known in this county; and as there are no grasshoppers, there is every prospect of success next season.

OVERESTIMATE OF CROPS.

Stanislaus County, California.—The wheat-crop in this State has been annually overestimated, in the first instance by farmers themselves. As an example, (though an extreme case,) a neighbor stated, in San Francisco, that his yield would reach 20,000 bushels; when thrashed, he had 4,500. This county was estimated at 7,000,000 bushels; as near as I can get true data from my own observation and that of my assistants, after visiting many thrashing-machines, the thrashing does not show half that amount. Many thousand bushels yet remain to be thrashed.

EXPERIMENTS IN RAISING COTTON.

Arkansas County, Arkansas.—I found one stalk of cotton, planted about the 18th of June, on which I counted 115 grown bolls. This will make 1.15 pounds of seed-cotton. An acre of cotton planted 4 feet by 4 feet, and each stalk producing as well as that, would yield about 3,000 pounds of seed-cotton. This year's experience proves to me that a fair crop of cotton can be raised on the bottom-lands, planted after the 1st of June, provided the land is in fair order. I have long been of the opinion that the most economical way to produce cotton is in checks, 4 feet by 4 feet on the bottom-lands, and 3 feet by 3 feet on uplands. I am certain that an intelligent laborer can cultivate twice as much checked, 4 by 4, as in the drill-system, in which at least three-fourths of the cultivating has to be done with the hoe. In the former method the riding sulky-plow can be used to great advantage, leaving little to be done with the hoe.

BENEFICIAL INFLUENCE OF AGRICULTURAL ASSOCIATIONS.

Gadsden County, Florida.—Under the influence of the Gadsden County Agricultural Association, which I am sory to say is the only permanent organization of the kind in the State, the farmers of the county have been greatly stimulated this fall to the seeding of an increased area of oats and a better preparation of the soil. Heretofore, the general rule has been to appropriate to the cultivation of the oat only such portions of the farm as were too much exhaused to produce an average crop of corn or cotton, and consequent failure has been the usual result. But experience has now demonstrated that there is no other crop planted which responds so satisfactorily to a liberal application of fertilizers and a proper preparation of the soil, and I trust that our farmers have entered upon a new era in regard to the growing of this invaluable cereal. In an adjoining county, 84 bushels to the acre in one instance, and 96¼ in another, have been realized on ordinary pine-land suitably fertilized and properly prepared for seeding. They were sowed the later part of October and harvested about the middle of May. The clay lands of middle Florida are admirably adapted to the growing of the oat, and if greater attention were given to it there would never be any serious complaint of a lack of corn.

JUTE-CULTURE IN THE UNITED STATES.

Experiments in cultivating jute in the Southern States thus far indicate that both the climate and the soil are well adapted to its growth, and there is a fair promise that its production will become an extensive and profitable industry in that section. Its fiber supplies material in manufactures for which there is a rapidly increasing demand, and which, except to a very limited extent, does not take the place of cotton; while, therefore, it will not supplant the latter nor compete with it in the market, it may enlarge the area of profitable rural industry in the South. It is claimed that were the South to divide the labor it now bestows exclusively upon cotton between that and jute, the result would be an increase in the value of the cotton-crop, it having been proved that, beyond certain limits, an increase in the product occasions a diminution in the total value; that it supplies the raw material for coarse fabrics, which are now largely imported by the cotton-growing States, but which might be manufactured by their unskilled female laborers at a saving of millions; that it can be raised and prepared for market at a greater profit per acre than cotton.

The following communication has been received from Mr. E. H. Derby, of Boston, who is an enthusiastic believer in benefits to result to the South, and so to the whole country, from jute-culture:

As the jute-plant has been acclimated in the Southern States and I have exerted myself to aid in its introduction, many questions have been addressed to me from the South as to the culture and harvesting of the plant. I have consequently written to a friend in India, and subjoin extracts from his reply, which will be useful to the planter if published in your valuable report. I am convinced by this reply and by other letters from the South that the rich lands of Florida, Louisiana, Texas, and Mississippi, will, with fair cultivation, yield 3,500 pounds, or ten bales, of fiber to the acre, in place of one-tenth of that amount of cotton. I am convinced also that it can be produced at less than one-tenth the cost of cotton, that the caterpillar will not touch it, and that if planted around the cotton-fields it may possibly protect them from that voracious insect. I am also led by my letters to hope that it will attain to its full growth in three to four months, and that the same field may yield two crops in one season. I have just returned from Scotland, where I visited the jute-factories in the flourishing city of Dundee, where the import and manufacture of jute is making wonderful progress.

The subjoined table gives in tons the import and manufacture of jute in that city since 1837:

	Tons.
In 1838	1,136
In 1847	6,966
In 1854	16,590
In 1872	96,000

Since 1854 the increase has been about 500 per cent., and in this interval of time the cotton manufacture has not grown at one-fifth of that rate. Some of the jute-yarn which I saw at the factories is spun very fine and sold for 8 or 10 cents a pound. It is used for bags and carpets, and some of the latter, handsomely colored, have sold for 16 cents per square yard. It is also interwoven with silk, linen, and woolen threads into cheap cloths.

By the subjoined extracts you will notice that the jute-seed from one acre will suffice to plant fifty acres, and that the plant is usually gathered some weeks before the seed ripens. I suggested this idea last summer to Mr. Chapman, of Point Coupee, but presume that most of our planters have this year allowed their seed to ripen, in which case they may have plenty of seed but inferior fiber, and possibly require the ramie-machine to separate the fiber from the stalk, and possibly thus make it available for coarse if not for fine fabrics. The progress of events convinces me that the jute is just what the South requires to diversify its industry and to fill up the gap when cotton is a failure. With the growing demand for it, jute promises to pay much better than cotton.

I noticed in the jute-mill at Dundee that after the jute was sorted a woman placed a layer of it on the floor, then sprinkled it freely, first with water and afterward with

oil; she then placed another layer over that and sprinkled it in the same manner and so piled up layer upon layer. This sprinkling was before the fiber was spun.

An extract from the reply above mentioned is given, as follows:

The quantity of jute and seed produced to an acre depends greatly on the richness of the land it is planted on. Serajgunge, Naranogunge, Dacca, and other northeastern districts, where about four-fifths of the total crop are raised, produced from 2,000 to 3,000 pounds of jute on an average; in some cases, however, as much as 4,000 pounds are produced. The yield of seed is about 1,000 to 1,200 pounds per acre. In the country fifty miles around Calcutta, the production of which is called dessee or country jute, the yield is smaller, being only about 600 to 1,000 pounds of fiber, and more seed, say 1,500 to 1,600 pounds per acre; but on rich, damp lands the product is almost as much as in the northeastern provinces. The dessee description was used only for local consumption until about five years ago, when shipments of it to England began, and both the shipments and production of it are increasing every year. Jute is sown broadcast, and about 22 to 28 pounds of seed are required to an acre. In the northeastern provinces it is planted in February and March, and is cut about the end of June and beginning of July; the dessee is sown in July and cut in August and September. On rich land it grows and ripens quicker. In the northeastern districts, when grown on rich soil, the diameter of the stalk at the bottom is from three-quarters of an inch to one and a quarter inches, and the length from 7 to 10 feet, and sometimes, but rarely, longer and thicker. The country jute is 4 to 7 feet long and one-half to three-quarters inch in diameter. The plants are cut about 3 inches above the ground, excepting dowrah, which is uprooted. The butts are cut at the time of baling the jute for export in Calcutta. When the stalks are cut they are covered with a green bark, which, after going through certain processes, becomes fiber. The planters cannot tell at the time of cutting the stalks whether any, or how far from the bottom any will be hard. The stalks are cut about a month before the seed ripens, and the poorer plants are generally let go to seed. Jute made out of the plants producing seed is hard and barky. The unripe seed cut with the stalks is of no use. It grows best on rich, moist ground, but not on low ground. Castor-oil cake is the best for it, and next to that cow-manure; but the country planters, as the ground is naturally rich, use no manure whatever. An acre of cotton costs much more than an acre of jute. Jute and cotton do not interfere with each other in the least. Cotton grows in the northwestern provinces, Central and Southern India, while jute is raised in Bengal. The little cotton that Bengal produces, and the little jute the cotton districts produce, are of poor quality, and only raised for local consumption. For the last few years jute has been encroaching on the linseed-crop, as the same ground is suitable for both.

The statements above answer, in part, the inquiries in the subjoined communication addressed to this Department by William M. Hazzard, of Georgetown, South Carolina:

The cultivation of rice is attended with so many difficulties and risks, and such an outlay of money, with little or no remuneration, that we shall be obliged to abandon our lands, or introduce some plant less liable to the disasters to which a rice-crop is exposed. From experiments I have seen made I am satisfied that our lands are well adapted to the growing of jute. This plant, whenever tried in the rice-fields, has grown most luxuriantly. I have thus far failed in my efforts to obtain seed enough to plant three or four acres the coming year. I should be glad to obtain all the information the Department of Agriculture can furnish in reference to the time of planting, mode of cultivation, time for cutting, and mode of curing and preparing for market.

A correspondent at Charleston, South Carolina, reports that he planted jute-seed June 10, on very poor land, and October 1 the plants had grown to a height of 6 feet. That it can be raised at the South with success and large profit he has strong faith.

The following extracts from correspondents give the results of their own experiments in growing it:

Orange County, Florida.—I plowed up and thoroughly prepared a half acre of medium grade pine-land, and sowed the jute in drills May 23. It came up well, but owing to the excessively hot, dry weather it all dried up. On the same day sowed a small plat in a bay-head. It came up and grew finely. I am now gathering the seed. Some of it is 12 feet high, and all as high as I can reach, showing that on damp, rich soil it will here succeed finely. This bay-head is muck, several feet deep, which I cleared off and limed two years ago. Upon it bananas grow from 12 to 15 feet high.

Muscogee County, Georgia.—I consider the experiment in jute-raising a success. The cultivation is simple and the cost of production small. I had seeds

sown broadcast on broad beds; some on sandy river land, and the rest on stiff clay land. The latter did very much better than the former. The cultivation was the same, but many of the plants on the sandy soil died out after having attained their full growth, while those on the clay lands remained green and vigorous and matured their seed. The plant requires moisture. The seed was sown in May, and the plants could have been cut in September. A frost, on the 15th of October, which injured the cotton, did not leave its mark on the jute. It attained the height of 15 feet, and in appearance somewhat resembles a plantation of young peach-trees before being removed from the nursery. I had the plants cut in October and steeped ten days in stagnant water, after which the fiber was easily stripped off.

New Orleans, Louisiana.—Jute-seed received from the Department of Agriculture was planted on the 11th of April. The soil was well plowed and harrowed and in good condition. Patch No. 1, rich soil, 3 feet above ordinary gulf-tide, planted in drills 3½ feet apart; patch No. 2, very rich soil, one foot above tide, planted in chops 4 feet by 2½; patch No. 3, same as No. 2, planted broadcast; soil very dry at planting. Seed covered one-half inch deep did not germinate until rain on the 22d of April. May 12. Passed the cultivator through patches 1 and 2. May 27. Chopped with hoe the large weeds from the same; jute 2 feet high; no further cultivation. Patch 3 received no attention after planting. Almost continuous drought this summer; jute suffered, but not so much as corn and other crops. July 10. Cut a portion of patches 1 and 2 9 and 10 feet high; put the same in bayou-water for seven days, and got beautiful fiber the entire length of the plant. July 15. Planted again the land which was cut on the 10th. At this date, October 10, this second crop is 8 feet high, looking well, although it has suffered much from excessive drought. Wishing to save as much seed as possible for a more extended planting the next season, I could afford but a fractional part of an acre on which to arrive at some idea of what amount of fiber we may expect per acre. On the 28th of August I cut a portion of patches 1 and 2, plants measuring from 11 to 13 feet: seed-burs about halfgrown. (This was in accordance with direction in Agricultural Report of 1871, page 172.) The quantity of fiber saved satisfied me that the yield of these patches would be quite equal to 4,000 pounds per acre.

Patch 3, broadcast, is exceedingly dense and heavy; portions being matted with native weeds, it is impossible to make a reasonably accurate estimate of yield per acre.

Wishing to test the aquatic qualities of jute, I selected patch 2, as liable to overflow by heavy rain. The season being almost entirely without rain, I transplanted some of my July planting, when 2½ feet high, into water several inches deep. The plants have continued to grow finely, and are now looking well; this in a continuous flood of water for several weeks.

The above correspondent (F. W. Johnstone) states: "The seed we are now gathering appears larger than that planted—evidently improved. It takes just 600 of the Calcutta seeds to equal in weight 500 of the Louisiana." But it is quite probable that when the newly gathered seed is thoroughly dry it will lose this excess in size and weight. Under date of October 22 he forwarded to the Department three samples of jute-fiber, with a report, of which the following is an abstract: Sample No. 1 was cut four and a half months from sowing, when the most forward seeds were half ripe; No. 2, three months from sowing, when the first blooms appeared. This he thinks the best time, as at that stage female labor can do the cutting, and there being then only one quality of fiber, the expense of slow and tedious assorting and of cutting butts is avoided. No. 3 was from the second crop, planted July 15, and cut two months later. He further reports:

Some of the July planting, second crop, is now fully matured for fiber; some planted the first week in August will make a full crop, unless the frost is unusually early. Inquiries from South Carolina to California are being made of me for seed for next season. I have none to spare. Mr. Chapman, of Red River Landing, is asking $5 per pound. He has two varieties, the pod-bearing and the bur-bearing seed. The pod-bearing variety he thinks much superior to the other. This he got, I think, three years ago, from the Department of Agriculture. The seed the Department sent out last spring was exclusively the bur-bearing, which is brown in color, while the pod-bearing is green. I have some plants which have been flooded constantly for two months now seeding in 6 inches of water.

Charleston, South Carolina.—I have done what I could to encourage experiments with jute, and have distributed hundreds of packages of seed raised by myself. Experiments have been in the highest degree encouraging. The plant seems to flourish quite as well as in India.

Mr. H. H. Stevens, of Webster, Worcester County, Massachusetts, a manufacturer of jute imported from India, to whom this Department sent a sample of that grown in Louisiana for examination, reports that in length, strength, and color it is fully equal to India jute. He adds:

The Department should do all in its power, and, if necessary, ask of Congress more power and more money, to extend the culture of this fiber in the country. Twenty seven years ago, in Dundee, Scotland, the question was, whether there was any value in jute. To-day, ot an export from Calcutta of nearly, if not quite, 3,000,000 bales per annum, Dundee consumes a large share.

The Department has received from gentlemen in Louisiana and Georgia very encouraging accounts of their experiments, together with specimens of the jute-fiber which they have produced. Mr. Thomas H. Dunham, of Boston, to whom a sample was forwarded, writes as follows:

The quality is very superior. The market is just now depressed very much. Some parties here have lost heavily on imported jute-butts, and this season (before the fire) India goods were imported at immense loss. The present rate is 6 to 8 cents a pound, (gold;) the usual rate 10 to 13 cents, (gold.) Your sample is very superior, and at 10 cents (gold) it would be safe to quote.

You will understand that our merchants do not favor home-growth of jute, or rather, make light of it; but my advice to you is, leave no step possible to push the jute-growth; make every effort to get it raised here. Beyond and above all obstacles push it on. The country will sustain this to any extent. The motive is greater than you can have any idea of. The moment you get the growth started, you will be fully assured, as capital will follow quickly, as in cotton.

Suppose it were a new growth of cotton, no one would doubt the success, or the aid needed. Our growth of jute will nearly equal half the cotton-crop. We can cut off India supplies, as we have done in cotton.

The interests of our merchants are so interwoven with India importations that they will (as they do) say, "You will never get any quantity grown," and make light of it. But your sample shows that its cultivation is feasible, and it must pay when the market changes. All orders to India are stopped now, and the revulsion will bring jute higher here, within the next year, than it has ever been.

COTTON-RAISING IN CALIFORNIA.

Reference has hitherto been made to attempts at cotton-growing in California, the results of which, during the last two seasons, seem to indicate that the climate and soil of the southern counties do not offer any insuperable obstacle to the production. The small crop of 1871 found a ready home market, being found to possess a remarkable fitness for combination with wool in various fabrics. The wool manufacturers absorbed the product of Merced County, paying 23 cents per pound, and made further inquiry throughout the State for "California cotton." The crop of 1872 has been variously estimated by parties whose facilities for obtaining information entitle their opinions to respect. Mr. Charles S. Capp, in an elaborate paper published in the "Resources of California" for November, gives the entire acreage in cotton during the past season at 800 to 900, averaging from three-quarters to a bale per acre. The San Francisco Commercial Herald, of a later date, gives the entire crop at 1,500 bales. Local estimates fixed the area planted in Kern County (part of which failed) at 500 acres, and the average yield of Merced, Fresno, Tulare, and Kern Counties at a bale per acre. Some isolated experiments, on a small scale, are reported in other counties.

In Merced County, near the villages of Snellings and Hopeton, on the Merced River, several enterprises in cotton-culture were inaugurated. Of these the largest plantation was that of Buckley & Brother—250 acres. These gentlemen, in 1871, raised over 20,000 pounds on 51 acres, an average of 400 pounds per acre. They claim for their crop of this year a far more promising and profitable character. Near them

Colonel J. M. Strong planted 200 acres; Mr. C. S. Peck 75 acres; Mr. C. Deane 25 acres. The total area of all the plantations in this locality was nearly 600 acres. These crops were all raised on alluvial bottoms deposited by the Merced River. They exhibited an exuberant growth of weed, many stalks being from 4 to 6 feet high, with an unusual number of bolls. The lower branches, in some instances, were weighed down so that the bolls rested upon the ground. On thin light soils underlaid with gravel the plant either opened its bolls prematurely or dried up altogether. On moister soils, unirrigated, the growth was sufficiently thrifty—from 3 to 5 feet; on still damper ground, or where irrigation had been used, it was too rank. Near Plainsberg, on Mariposa Creek, about a dozen miles south of the Merced River, about 100 acres were planted in cotton. Mr. H. M. Ruer raised a good crop on wheat-land, unirrigated. He found the best soil to be light sandy loam or sedimentary drift, which, when well pulverized, did not crust or bake. In the same locality Mr. R. Harris planted 27 acres; Mr. T. J. Wilcox 26 acres; Messrs. Turner and Helm 20 acres. The soil of this locality is drier than on the Merced River plantations, and the cultivation not so careful, hence the stand secured was inferior.

In Fresno County Mr. C. D. Davis planted 40 acres, near King's River, using 30 pounds of seed per acre, with irrigation. He was surprised to find the bolls at the second picking as numerous and opening as freely as at the first. His entire expense of cultivation is reported at $770, giving a margin of profit so broad as to induce him to enlarge his plantation to 160 acres in 1873. It is currently estimated that during the coming season 1,000 acres will be planted in cotton in Fresno County.

Mr. G. W. Allan, near Bakersfield, Kern County, exhibited fine specimens of Dixon, Texas, and Golden Prolific cotton, which, though planted late—some of it in June—matured a month earlier than it would have done in his native State, South Carolina, producing a finer and whiter staple. He finds the cotton season of that locality remarkably long, no injurious frosts to be apprehended from April 1 to October 10. Cotton not being planted till after the close of the rainy season does not require the laborious and expensive process of hoeing to keep down the weeds. As it is gathered before the next rain-fall, there is no occasion for "moating" or separating the rain-stained fiber from the clean. Mr. Stein raised a small crop in the same locality in a young vineyard. It was a fair crop, though somewhat neglected in its earlier stages. The growth was as thrifty on the alkaline portions of the field as on any other.

The "California Cotton-Growers' and Manufactures' Association" purchased 10,000 acres near Bakersfield. Of this area only 300 acres were planted the past season on account of the difficulty of obtaining good seed. A portion of this crop being freely irrigated, was ruined by weeds. Other portions, to which this process had been more sparingly applied, produced a fair crop. That portion which escaped the infliction entirely made a remarkably fine growth. Superior samples of Peerless, Dixon, Golden Prolific, and Texas were exhibited, of which the earlier planted were the more excellent. The association proposes to plant 2,000 acres in 1873. To encourage the growth of the staple during the coming season, it will, without charge, furnish the neighboring cultivators with good seed and gin all their crops.

A considerable importation of cotton-gins has been made, especially of portable machines, in different parts of the State. The crop realized from 20 to 22 cents per pound in different localities.

FLORIDA AS A HOME FOR EMIGRANTS.

Mr. John F. Rollins, of Fort George Island, Duval county, Florida, sends the following account of his experiences and observations upon Florida as a home for emigrants:

My plantation is a sea-island in the mouth of the Saint John's River. We have a slight frost occasionally, but the orange and other equally hardy trees do well even further north, *if upon the sea-coast.* I find also that grapes, peaches, figs, plums, &c., do well with me.

I have been a resident here for four years; have passed through many, if not all, the experiences of a new settler in this State, and have come to the conclusion that if those who come here to settle will bring the same amount of health, good sense, money, and pluck which new settlers take to the far West, we should have less complaints of Florida and more successful settlers. The truth is, writers about Florida have given more "flowers" than facts, and hence settlers have come here expecting too much from the climate and depending too little upon their own efforts. It is hardly to be expected that one so sick and broken down in the North that he can live there no longer should be able to come here, bringing, it may be, only a few hundred dollars with him, go into the woods to make him a home, and go successfully through all the hardships incident to such a life. Yet, very many of our new settlers have been of this character, and consequently there have been many failures. Florida is a "land of flowers;" but still it requires time and labor to raise crops and to grow orange-trees. There is no question of the profitableness of fruit-raising. Oranges, lemons, limes, figs, grapes, bananas, pine-apples, pomegranates, peaches, apples, pears, plums, &c., grow well in various parts of the State, and a settler can select his location so as to raise whatever fruits he wishes; but he cannot grow every kind upon the same lot, nor can he expect to have them all in a day. The orange will, of course, be the chief attraction, and settlers will especially desire information about that. I have given this fruit careful study, and find that it flourishes over a large part of the State, though some localities are better suited to it than others. The young trees are tender, and require careful attention and cultivation, but when once established they are hardy; and, having reached the proper age, bear annually large crops of beautiful fruit. As there are no good nurserymen engaged in raising young trees, we have heretofore been unable to procure good ones of any variety, and it would be a great help if the Department would aid us in procuring stocks and seeds to propagate from.

Frosts and the scale-insect are to be contended with by the orange-grower. From all information I have been able to collect, frosts seldom do serious injury, though occasionally a crop may be lost and a few trees killed. As a protection, I would suggest that the limbs of the orange-tree be left to grow as near the ground as possible. Where they are cut off it would be well to place a wide board against the *south side* of the trunk, to protect it from the sun after a freeze, as it is its hot rays shining upon the exposed trunk, suddenly thawing the congealed sap, rupturing the sap-vessels and splitting the bark, which kills or injures the tree. The scale-insect may be disposed of by care and carbolic soap.

It requires about the same time and care to bring an orange as it does an apple orchard into bearing, but the orange-orchard is more profitable than the apple, and full as safe. So with other semi-tropical fruits; when once in bearing in their chosen localities they are very profitable.

The new settler must use good judgment in selecting land for the crop he wishes to grow, and not believe all that is told him by those who have land to sell. Our climate, soil, and crops are so different from those of the North and West that the new-comer has to study each, and often has to learn how to raise a good crop under the teaching of experience—a teaching which is expensive of both time and money.

Of our field-crops, sugar-cane is doubtless the best. It is a pleasant crop to raise, and properly and well manured, has proved exceedingly profitable. By the use of manure, as large crops of sugar-cane can be raised in Florida as in any other State, if not larger; no other State has a climate better suited to its production. Lands not too dry should be selected; those low and moist but well drained are best. Good modern machinery is not very expensive, but if settlements were made in colonies, so that one large mill would answer for all, it would be a decided advantage.

Sweet potatoes, cultivated near a market, are quite profitable. And so of other vegetables. Nearly all varieties grow well here, and the farmer who will give proper attention to the cultivation of a garden need *never* be without fresh vegetables for his table. Many fail in this, and so throw the blame upon Florida; but the reason of their failure is that they do not select a suitable place for the garden, or do not plant at the proper time, and give it due attention subsequently.

The soil of Florida is mostly sandy; some sections, however, have clay and others have limestone formations. Much of the sandy portions is underlaid with clay, and when near the surface the land is good. The State has large stores of natural fertilizers; muck and marl beds are often met with. The lands generally being light, require manure to produce large crops, though good ones are often made without it. If our people used the same amount of manure used in New England, our crops would compare favorably with any section.

The climate is favorable to the prolongation of life, the extremes of heat and cold are less than in the other States, and the air is bland and healing. The out of door life led by the inhabitants tends to health, and when they live in a comfortable manner, have suitable food, and take reasonable care of themselves, there is very little sickness, and very many who come here sick and drawing near to death, recover and become hale and hearty. The new settler should take care to secure a high and dry building-spot, as far from stagnant water as may be. The pine-lands are most salubrious, though old clearings in the oak hummocks are usually healthy. There is more or less fever, chills, &c., but ordinarily these readily yield to proper remedies. Much of such sickness would be avoided by suitable care; new-comers should not work out of doors during July, August, and September between the hours of 11 a. m. and 2 p. m., nor should they expose themselves to the night-air if located in a malarious region. We have a long warm summer, but the thermometer does not rise so high as in the far North. A trip to the sea-coast or to the North by those who live in the interior helps to brace the system up, if by chance it becomes debilitated; in short, a change of scene is a good thing here as elsewhere.

The State has many latent sources of wealth that need to be developed by the busy hands of settlers from older parts of the world. There is room for many thousands; many thousand acres of land are vacant, on which capital, both in money and in labor, can be safely and profitably invested. The people are well-disposed toward all who come among them to settle and mind their own business. Persons wishing to settle here should first come and examine for themselves, go over the State, see what has been done, gain all the information they can from old settlers, *be sure to sift truth from fiction in all that is told them*, and then buy where they like best.

AGRICULTURAL STATISTICS OF IRELAND.

The official report of William Donelly, registrar-general, states that the agricultural statistics of Ireland for 1872 were collected by about 3,800 enumerators, taken from the royal Irish constabulary and metropolitan police, the agency heretofore employed for the purpose. The number of "holdings" visited was about 600,000. The only returns usually required are those of area under each crop, and numbers of farm animals. The census requires two months, and is made in June and July.

The total acreage under all crops was 5,486,522; in 1871, 5,621,437; decrease, 134,915. All classes of crops suffered diminution of area, viz, cereals, 33,361; flax, 34,667; a total loss of 68,028 acres in white crops. The decrease in the green crops was 37,773; meadow and clover, 29,114; or 66,887 acres of the broader class of green crops.

Subdividing these classes, the only crop increased among the cereals was that of beans and peas, while the decrease in wheat was 16,262; oats, 14,323; barley, 2,085; bere and rye, 1,560. In green crops there was increase in turnips, 19,429 acres; mangel and beet root, 2,999; cabbage, 6,387; carrots, parsnips, and other crops, 1,334. Potatoes showed a decrease of 66,632 acres; vetches and rape, 1,290.

The returns give for the total of land in the island, exclusive of the larger rivers, lakes, and tideways, 20,325,693 acres, made up as follows: under crops, 5,486,522 acres; grass, 10,241,513; fallow, 18,512; woods and plantations, 325,173; bog and waste, unoccupied, 4,253,693.

Area under the several crops in each year, from 1868 to 1872, inclusive.

Crops.	1868.	1869.	1870.	1871.	1872.
	Acres.	*Acres.*	*Acres.*	*Acres.*	*Acres.*
Wheat	285, 150	280, 460	259, 846	244, 451	228, 189
Oats	1, 701, 645	1, 685, 240	1, 650, 039	1, 636, 136	1, 621, 813
Barley	186, 318	221, 710	241, 285	220, 979	218, 894
Bere and rye	9, 906	11, 183	11, 797	11, 555	9, 995
Beans and peas	9, 960	9, 955	10, 689	10, 913	11, 782
Potatoes	1, 034, 681	1, 041, 902	1, 043, 583	1, 058, 434	991, 802
Turnips	320, 094	322, 072	339, 059	327, 035	346, 464
Mangel and beet-root	19, 109	21, 129	25, 400	31, 921	34, 920
Cabbage	32, 875	32, 265	34, 979	33, 008	39, 395
Carots, parsnips, and other green crops	26, 622	26, 501	27, 712	29, 869	31, 203
Vetches and rape	22, 993	25, 395	27, 990	31, 422	30, 132
Flax	206, 483	229, 252	194, 910	156, 670	122, 003
Meadow and clover	1, 692, 135	1, 670, 716	1, 773, 851	1, 829, 044	1, 799, 930

The following are the numbers of live stock for each year, from 1862 to 1872, inclusive:

Years.	Number of horses.	Number of cattle.	Number of sheep.	Number of pigs.
1862	602, 894	3, 254, 890	3, 456, 132	1, 154, 324
1863	579, 978	3, 144, 231	3, 308, 204	1, 067, 458
1864	562, 158	3, 262, 294	3, 366, 941	1, 058, 480
1865	548, 339	3, 497, 548	3, 694, 356	1, 305, 953
1866	535, 799	3, 746, 157	4, 274, 282	1, 497, 274
1867	524, 180	3, 707, 803	4, 835, 519	1, 235, 191
1868	524, 703	3, 646, 796	4, 901, 496	869, 578
1869	528, 201	3, 733, 675	4, 651, 195	1, 082, 224
1870	532, 657	3, 799, 912	4, 336, 884	1, 461, 215
1871	538, 095	3, 976, 372	4, 233, 435	1, 621, 423
1872	540, 745	4, 057, 153	4, 262, 117	1, 385, 386
Difference in numbers betweeen 1871 and 1872	Increase. 2, 650	Increase. 80, 781	Increase. 28, 682	Decrease. 236, 037

Horses are estimated at £8 each; cattle, £6 10*s.*; sheep, 22*s.*; pigs, 25*s.* At this rate the total value of horses in 1872 is £4,325,690; cattle, £26,371,495; sheep, £4,688,329; pigs, £1,731,733; amount, £37,117,517, being an increase of £281,781 over the value of live stock for 1871, estimated at the same rate.

ENTOMOLOGICAL RECORD.

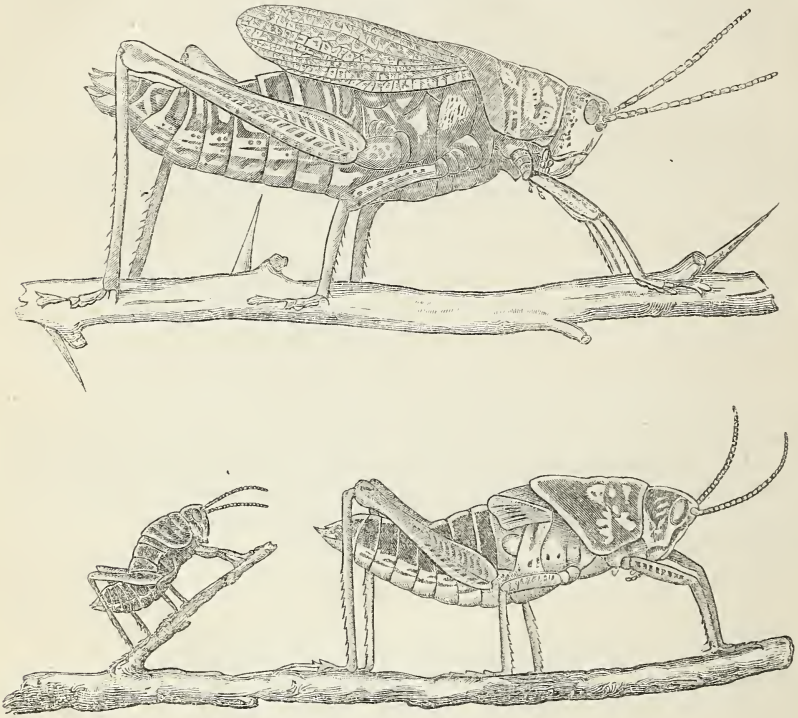
By Townend Glover, Entomologist.

A large grasshopper.—A letter has been received from a correspondent in Louisiana, complaining of the injury done to the truck-farmers by a large grasshopper, which, from his description, appears to be the *Romalea microptera*, (of Serville,) or the *Gryllus centurio*, of Burmeister. He states that the insect has been known for forty years, appearing in May along the South Atlantic and Gulf coast. "Heretofore," he says, "it has been comparatively harmless, but this year it was very injurious to melons and vegetables; it also climbed peach and fig trees to devour the fruit; it cannot fly, as its wings are too short."

The insect was described in the Agricultural Report for 1858, as occurring in Florida, where it was commonly known as the "lubber," from

its sluggish habits. It was very voracious, and was very destructive in the young orange-groves by devouring the leaves. The insects also destroy many garden-vegetables and plants, though they were not especially destructive to them at that time and place, but appeared to be more injurious to the foliage of the orange-tree. They crawl slowly over the ground or upon shrubs, and are so nauseating that even fowls reject them as food. The eggs are probably deposited in the earth; the young larvæ are striped like the mature insects, but are perfectly wingless; they are of a black color, beautifully striped and banded with orange or red, the pupæ also are black, shaded, and bearded on the thorax with yellow or orange red, and the abdomen is banded, and the hind thighs bordered with the same color. The insect, when fully grown, is from 2 to 2.50 inches in length, and is of a yellow or orange color, barred and spotted with black.

Fig. 19.



The wing-cases are extremely short, reaching only half way to the extremity of the abdomen, and are totally useless to the insect for the purpose of flight. These wing-covers are yellowish, shaded with rosy-pink, and are barred and spotted with black. The insects are extremely voracious, and from their large size are able to consume an immense quantity of food, and no doubt, if found in great numbers, would do immense injury in market-gardens, but as they never fly, merely creeping or jumping heavily, they can be readily destroyed by catching in a net, or by crushing with the foot, in every stage of their existence. It would, however, be well to destroy them when very young, as if allowed to grow they will consume as much as half a dozen common grasshoppers (*Caloptenus*) at one meal.

INSECT-INJURIES.—The Hessian fly (*Cecidomyia destructor*) was observed during October in the early sown wheat of Botetourt County, Virginia. The young crop was here attacked also by some unknown insect working under ground and devouring the rootlets and stalks. During November this insect was observed in Frederick, Shenandoah, and Page Counties, Virginia; Clarke County, North Carolina; Fulton County, Arkansas; Berkeley County, West Virginia; Miami and Vinton Counties, Ohio; and Jennings and Saint Joseph Counties, Indiana. In the last-named county the ravages of this insect were confined to sandy soils, while the grub-worm (*Lachnosterna fusca*) operated in clay-soil crops. The chinch-bug (*Micropus* (*Rhyparochromus*) *leucopterus*) was noted in the wheat-crops of Jennings County, Indiana, and Lawrence County, Illinois. Undescribed wheat-destroying insects were reported in Boone and Hamilton Counties, Illinois.

The cut-worm (*Agrotis?*) was destructive to corn in Oakland and Calhoun Counties, Michigan; Outagamie County, Wisconsin; and Franklin County, Missouri. This insect was especially troublesome in corn planted upon sod-land that had not been fall-plowed. The chinch-bug was active in Sangamon, Clinton, Perry, and Lawrence Counties, Illinois; and in Phelps, Franklin, and Morris Counties, Missouri. The white grub was destructive to sod-land corn in Washington County, Rhode Island. Grasshoppers (*Caloptenus spretus*) were complained of in Thayer County, Nebraska, and in Bonhomme County, Dakota.

Grasshoppers destroyed the buckwheat-crop in Lincoln County, Kansas, and Clay County, Dakota.

Grasshoppers damaged the oats in Morgan County, Utah.

Chinch-bugs destroyed the sorghum-crops in Brown County, Indiana, and Phelps County, Iowa; in the former the old Chinese sorghum is especially mentioned, the other varieties not being injured.

In Hamilton County, Indiana, and Lee County, Iowa, the hay-crop was shortened by grub-worms. In Franklin County, Kansas, all the experimental crops of blue grass were swept by grasshoppers. In Kendall and Blanco Counties, Texas, immense swarms of this destructive insect are reported as perforating the earth and laying eggs for their next generation. They afterward departed southward.

In Mechlenburgh County, Virginia, tobacco-worms (*Macrosila Carolina*) were less destructive than usual; these grubs were destroyed by hornets and yellow-jackets. In Nelson County cut worms assailed the crop just as it was planted; as soon as it was above ground, in moist soils, it was injured by horn-worms.

Potato-bugs were reported in Madison County, Virginia; Logan, Tuscarawas, Ross, Pickaway, Morgan, Meigs, Coshocton, Butler, and Ashland Counties, Ohio; Washtenaw, Montcalm, Lenawee, Clinton, and Antrim Counties, Michigan; Marion, Gibson, Decatur, Steuben, and Franklin Counties, Indiana; Winnebago, Putnam, Cass, and Clark Counties, Illinois; Outagamie, Wisconsin; Steele and Redwood Counties, Minnesota; and in Thayer County, Nebraska. In most of these cases the Colorado beetle (*Doryphora decemlineata*) was mentioned specifically. In New London County, Connecticut, the white and wire worms were spoken of; and in Thayer County, Nebraska, blister-flies, as injurious to potatoes. Hardin County, Iowa, was exempt after seven years of visitation. "Tycks Seedling" potato is reported there as "bug-proof."

Much harm was done by cabbage worms in Luzerne County, Pennsylvania, and Cecil County, Maryland.

The canker-worm was destructive to apples in Suffolk County, Massachusetts.

Caterpillars and boll-worms were observed in the cotton-crop in numerous counties in the cotton States, a continuation of the ravages previously reported.

CHEMICAL MEMORANDA.

By Ryland T. Brown, Chemist.

Laboratory work.—The fiber of a species of aquatic grass, (*Sporobolus cryptandrus*,) found growing along the shore of Lake Erie, was sent to the laboratory by H. C. Beardsley, of Painesville, Ohio, to determine its adaptation to the manufacture of paper.

A proximate analysis shows the following composition in 100 parts:

Inorganic matter	1.947
Cellulin, (fibers)	98.053
	100.000

It is therefore rich in the material for the manufacture of paper.

A specimen of marl from Queen Ann's County, Maryland, presented by Thomas Hill, of Baltimore, Maryland, gave on analysis the following result:

Moisture, (determined at 100° C)	0.2700
Carbonate of lime	57.0445
Phosphoric acid	0.7097
Sesqui-oxides of iron and alumina	2.1103
Silica	39.8655
Magnesia and potash, of each	a trace.
	100.0000

W. A. Hein, New Iberia, Louisiana, asks the analysis of a species of muck which is abundant in that vicinity, and which he proposes to use as a fertilizer. In 100 parts, it has the following composition:

Moisture, (determined at 100° C.)	21.300
Organic matter	38.200
Oxides of iron and alumina	2.832
Phosphoric acid	0.678
Lime	0.310
Magnesia	0.388
Siliceous matter	35.622
Loss	0.570
	100.000

Mr. J. H. Philips, Spring Bluff, Adams County, Wisconsin, presents a sample of shale or rock of which he wishes to know the value as a fertilizer. On analysis it shows the following composition:

Water, (determined at 100° C.)	1.700
Siliceous matter	43.110
Iron and alumina, (oxides)	20.655
Lime	5.360
Magnesia	11.560
Soda	3.446
Carbonic acid	14.258
Phosphoric acid and potash, of each	a trace.
	100.089

A package of mineral phosphate from near Charleston, South Carolina, was sent to the laboratory by the Commissioner of Agriculture. Its composition is—

Water, (determined at 100° C.)	4.4750
Organic matter	33.8400
Insoluble silica	7.8620
Soluble silica	0.6650
Oxides of iron and alumina	7.2702
Insoluble phosphoric acid	16.3485
Soluble phosphoric acid	1.3860
Lime	18.0591
Magnesia	0.1360
Potassa	0.1541
Soda	1.3286
Chlorine	0.5960
Sulphuric acid	6.8712
	99.9927

VALUE OF CITY WASTES.—The German system of experimental stations is furnishing scientific agriculture with *data* which cannot fail to have an important bearing on the production of that region. Mr. Lepmann, director of the central station in Bavaria, speaks of the loss of fertilizers in the wastes of the city of Munich, which he estimates as containing a population of 177.000. The amount of available nitrogen annually lost in the human excrements, fluid and solid, of that city, he places at 1,857,714 pounds; to which he gives a value (reduced to our currency) of $433,467. This gives an aggregate loss of nearly half a million of dollars. While this waste is being suffered the German fields are enriched by an annual importation of 1,000,000 hundred-weight of Peruvian guano, at a cost of about three millions of dollars. Munich, however, is but one of a number of German cities whose wastes, if calculated at the same ratio, would be equal in value to the fertilizers imported. Mr. Lepmann proposes that this waste be saved.

ABSORPTION OF AMMONIA BY CHARCOAL.—Journal of the Chemical Society (London) gives a very interesting series of experiments on the absorption of gases by charcoal, as that phenomenon is effected by temperature. The experiments were conducted and are reported by John Hunter, M. A., and were performed chiefly with gaseous ammonia and cocoa nut charcoal. The principle established by these experiments is that the absorbent power of charcoal diminishes from 0° C. to 55° by a ratio corresponding to the change of temperature; but above that temperature the ratio constantly decreases as the heat increases. These facts have an important agricultural bearing. Vegetable mold owes its dark color chiefly to the presence of carbon, substantially in the condition of charcoal, and on this, to a great degree, depends its power to absorb gases. At night, when the temperature of the soil falls to 15 C. (60 F.) the absorption of ammonia will be active and a stock will be accumulated in the soil; but when the temperature rises with the sunshine the function of the leaves become active and the supply of food for the roots is diminished.

THE BLACK SOIL OF RUSSIA.—We reproduce the following paper from the researches of L. Grandeau, into the nature of the black soils of Russia. This investigation has an important bearing on American agriculture, as we have in the Northwestern States and Territories thousands of acres which agree in chemical composition and in physical properties with these Russian soils. The chief importance of these researches, however, is found in the light which they throw on the part which oxalic

acid and carbonate of ammonia play in rendering soluble the mineral elements of plant-food. But the paper will speak for itself, and we ask for it a careful perusal:

The point of departure in my researches is a work upon the black soils of Russia, the fertility of which is well known. Having at my disposition large samples taken from a vertical section of three meters (9 feet 9 inches) at Uladowka, (Podolie,) I have been able to make a complete examination of a soil which, having never received any manure of any kind, and having been submitted to triennial rotation, produced for several years 22 hectoliters (about 62.4 bushels) of oats and 30,000 kilograms (66,000 pounds) of beets per hectare, (2.47 acres.)

The chemical composition of these soils does not indicate a persistent fertility; and it was to determine the cause of this which led me to the results which form the subject of this memoir. The black soil owes its color and perhaps its fertility to a particular combination of the organic matters with silica, phosphoric acid, iron, lime, and magnesia, which I have separated, and of which I shall describe the principal properties, united in the soil, in all probability, with earthy bases. This complex substance is not removed, in its natura state, either by water, or by acid or alkaline solutions. It is first necessary to destroy the calcareous combination in which it is engaged. We may proceed in the following manner: treat the soil with a slightly acid solution, wash by displacement in order to remove the excess of acid, moisten the residue with ammonia, and exhaust the soil by continued washing with ammoniacal water. The black matter is thus dissolved, the soil is completely decolorized, and its physical and chemical properties sustain important modifications.

The dark-brown solution thus obtained, treated for the ordinary re-actions of phosphoric acid, iron, magnesia, lime, and silica, does not indicate the presence of any of these substances, which facts correspond with those observed by Th. de Saussure in his classic researches upon the soils.

Evaporated to dryness it gives a brilliant black residue, brittle and soluble in the alkalies. When calcined this carbon leaves a red colcothar residue, whose coloration and weight vary with the nature of the soil from which it is obtained. This carbon will, as the case may be, give from 2 to 60 per cent. of its weight of ash. Treated with nitric acid this residue is partially dissolved; the soluble part consists of the phosphates of iron, manganese, lime, magnesia, and potassa. The part insoluble in nitric acid is completely attacked by sulphuric acid. It consists of silicate of iron containing a little silicate of lime. I consider it due to M. P. Thenard to recall here the important part which he was led (in 1858,) according to his experiments to assign to the silicates as solvents of the phosphates in the soil.

As we have seen, ammonia, in certain conditions, dissolves in the soil the phosphates of iron, lime, magnesia, and silica in a state of combination which chemistry has heretofore been unable to produce.

The black soil which I have analyzed contains, per 100 grams of soil, 0.30 gram of phosphoric acid, of which 0.16 gram, that is to say 80 per cent., is in a state easily rendered assimilable by vegetables, as we shall see further on. The soil of Russia gives per kilogram 42 grams of this black matter, leaving by calcination 21 grams of ash.

The analyses of different soils collected in my work and the comparison of the agricultural products of these soils show that there is a close relation between the fertility of a soil and its richness in matters soluble in ammonia, (especially phosphoric acid in this particular state.)

What are the re-actions under whose influence the organic matter combined with the earthy basis in the soil in nature are placed at the disposition of the roots of vegetables? The following facts seem to me to offer a satisfactory response to these questions. I have ascertained that the intervention of a strong acid, such as chlorhydric, is unnecessary; a dilute solution of oxalic acid will set free, in the soil of Russia, the matter soluble in ammonia. When the black soil is treated with oxalic acid, then with water, and finally with ammonia, we obtain a brown solution containing phosphoric acid, iron, lime, magnesia, and silica, as with chlorhydric acid. The oxalic acid, which usually appropriates the calcareous elements of the soil, is unable to precipitate the lime engaged in this organic combination.

After having endeavored, without any decided success, to substitute free carbonic acid gas for oxalic acid, I have completely succeeded with carbonic acid, combined with an alkaline base, especially with carbonate of ammonia; a dilute solution of this salt passing slowly through a layer of black soil plays successively the part of an acid and that of a base, vis-à-vis, upon the black matter in question; at the beginning of the experiment the carbonate is decomposed, its carbonic acid combines with the lime, which renders the black matter of the soil insoluble; the ammonia thus set free dissolves the black substance liberated from the lime, and the soil is decolorized; the deep-brown solution, evaporated to dryness, gives a red residue, (phosphoric acid, iron, lime, magnesia, and silica,) exactly analogous to that which I have described

above. We have reason to think, therefore, that carbonate of ammonia is the true natural agent for the solution in the soil, of iron, phosphoric acid, silica, lime, and magnesia, that is found in that particular state which is the object of our study. If I add that farm manure, treated in like manner as the soil, gives all the points comparable to the ammoniacal solution of this black soil, I shall have pointed out the principal results of my analytical researches.

It now remains to examine how this solution of phosphates, silica, lime, &c., behaves in the nutrition of vegetables and the influence exerted by their presence or absence in soils having other parts identical. I have undertaken, for this object, direct experiments, the results of which I have the honor to communicate to the academy, whatever may be the end. I shall now endeavor to show how the black solution extracted from the soil behaves in a dyalizer. In the interior vessel I placed a solution of black matter, giving by calcination 53 per cent. of mineral residue, (compared with the weights of dried black matter.) After thirty-six hours the exterior liquid, (distilled water,) which had remained entirely colorless, was evaporated and the residue analyzed. The latter, which contained no carbonaceous matters, was composed of phosphates of iron, manganese, lime, magnesia, and a small quantity of the black solution of soil, less the organic substances. The liquid of the interior vessel was evaporated, and the residue, calcined, gave but 8 per cent. of ash; 85 per cent. of the mineral elements having therefore passed through the membrane. It seems to me to result in this: 1st. That the mineral elements in question (phosphoric acid, iron, lime, magnesia, &c.) are in a state directly assimilable by the vegetables, or that they may be more or less absorbed by the roots. 2d. That the organic matter of the humus is not absorbed and remains in the soil.

It follows from all the facts recorded in my memoir, 1st. That fertile soils contain the nutritive elements under the form offered in farm manure. 2d. That the fertility of a soil is intimately connected with the richness in the mineral elements and organic matter soluble in the ammonia which it contains. 3d. That the organic substances are in nature the vehicle of mineral plant-food, which they extract from the soil in order to present them under a form immediately assimilable by the roots of vegetables.

SCIENTIFIC NOTES.—Professor Roscoe, in a recent lecture, gives the results of his observations on the sun's rays. The intensity of solar heat reaches its maximum some time after the meridian, but the chemical rays have their highest force at noon. The chemical intensity of the solar rays appears to depend entirely on their approach to the vertical direction, and therefore have equal intensities at equal distances on each side of the meridian. The chemical power of sun-light also varies with the place of observation in a manner which cannot be accounted for by the difference in latitude. Professor Roscoe gave the results of measurements made at Kew, at Lisbon, and at Para. At Kew the chemical intensity was represented by 94.5, at Lisbon by 110, and at Para by 313. A hazy atmosphere appears to cause the absorption of the chemical rays in a remarkable degree. This would appear to demand a clear atmosphere for the healthy condition and rapid growth of vegetation.

Influence of alcohol on animal heat.—The old idea that alcoholic drinks heighten the temperature of the body has received numerous contradictions in recent times. C. Binz (N. Repert. Pharm., xxi, 116, 122) communicates the results of experiments performed by Dr. Mainzer on himself and on another healthy individual of strong constitution. The experiments were carefully performed, avoiding all possible sources of fallacy. Dr. M., in making observations on himself, lay in bed lightly covered, and determined the temperature by means of a very delicate thermometer, the indications of which were read off every fifteen minutes. The alcohol was taken between 7 and 10 in the morning, 3 and 7 in the afternoon, and 9 and 12 in the evening. The alcohol (98 per cent.) was diluted with thrice its bulk of water, and the quantity varied from 15 to 80 cubic centimeters. As the result of his observations, Dr. Mainzer concludes that there is no appreciable alteration in the temperature when alcohol is taken in the above doses.

Cultivation of the cinchona-trees in Java.—The Journal de Pharmacie et de Chimie for October says: "In a letter from M. Van Gorkom,

the author states that the cultivation of these trees prospers in every respect; a manufactory has been established for the preparation, on the spot, of alkaloids, (quinine, &c.,) extracts and other pharmaceutical preparations derived from the cinchona-barks, and six tons of that bark were sold by public auction at Amsterdam in March last. The annual expenses of cultivation, &c., are now balanced, and all the original outlay of capital is expected to be returned before the year 1876."

Paper from wood.—In the manufacture of paper from wood the pulp was formerly produced by mechanical means chiefly. A new method, invented by Sinclair and improved by Unger, has been adopted in Germany, it is said, with good success. The wood is treated with strong soda-lye under pressure of six atmospheres. The fiber is bleached with chloride of lime as usual. It does not require grinding to form a pulp, and a good substantial paper is produced without a mixture of rags.

Ammonia in bituminous coal.—Dr. Gerlach in a recently published essay, entitled "Investigations of some of the ammoniacal waters of gas-works," gives an interesting exhibit of the amount of ammonia, and the form in which it exists, in the coals of Saxony. At the Chemnitz gas-works, where the Zwichau coal is used, he found the water to contain hyposulphite of ammonia, 0.103; sulphide of ammonium, 0.034; bicarbonate of ammonia, 0.105; carbonate of ammonia, 0.456; sulphate of ammonia, 0.046; chloride of ammonium, 3.046. Gas-water from the Bonn gas-works, where Ruhr coals are used, contains hyposulphite of ammonia, 0.503; sulphide of ammonium, 0.622; bicarbonate of ammonia, 0.245; carbonate of ammonia, 3.312; sulphate of ammonia, 0.130; chloride of ammonium, 0.374. These numbers relate to grams in 100 cubic centimeters.

Improvements in street-cars.—We are pleased to observe that Mr. Stephenson, of New York, whose name is favorably associated with the building and furnishing street-cars for the principal cities of the world, has introduced several improvements in the construction of that almost indispensable vehicle. The first of these relates to the method of connecting the running-gear to the body of the car. This improvement consists in the use of rubber, or other elastic material, interposed between the iron connections, so as to relieve passengers from the annoyance of the clatter and noise of the wheels, and the disagreeable jar produced by the application of the brakes. Another important improvement consists in substituting a spring-check for the axle-shoulder. This is designed to relieve the concussion felt when the car is forced from side to side by the inequalities of the track. What remains now is to discover and apply some cheap and efficient power for propelling street-cars. The late visit of the horse-disease to our principal cities has impressed us with the importance of this matter, and taught us how inconvenient it would be to return to our former methods of city locomotion.

Native sulphur.—At the late meeting of the British Scientific Association, Dr. J. W. Mallet reports the discovery of a remarkable bed of native sulphur in Louisiana, at a point about fifty miles east of the Texas line. A boring struck the bed of sulphur at the depth of 450 feet, and, after penetrating it 100 feet, passed into gypsum underlying the sulphur. We have heretofore regarded native sulphur as of volcanic origin; but there is no evidence of volcanic action in this vicinity. It is stated, in the paper referred to, that the sulphur is more or less mixed with calcium carbonate, which would indicate deposition from water; but sulphur, except in chemical combination, is not soluble in

water, and therefore could not have been deposited by precipitation. It is said that petroleum is found on the surface in this vicinity, and combustible gases escape in the same locality. Did this bed of sulphur originate in the decomposition of carbon sulphide formed in connection with petroleum? The question of the origin of this sulphur-bed is one of transcendent interest in mineralogical chemistry.

Uniform standard of measures, &c.—The scientific circles, both of Europe and of this country, are continuing the agitation of the question of uniformity in weights, measures of length and capacity, coinage, &c. When nations were isolated, as they were five hundred years ago, each one could have its own standards; but the present state of intercommunication demands uniformity. This is not merely the demand of commerce and trade, but the scientific investigations of the age require uniformity in standards of comparison, in the several fields where these are prosecuted. Nothing can be more absurd than the English system of weights and measures, which in the main we have followed. For example: we write—*it weighs an ounce.* Now, who knows precisely our meaning? It may be the avoirdupois ounce—the sixteenth part of a pound; or it may be, as the word means, (Latin, *uncia*,) the twelfth of a pound. Science demands something more certain than this. If there are formidable objections to the French decimal system, they must be removed, or some other standard, divided decimally, must be adopted. This must extend, especially, to the measures of temperature, so as to abolish the present confusion, consequent on having three standards of graduation in thermometers.

Effects of compressed air on combustion.—James B. Eads, in his report of 1870 on the bridge at Saint Louis, stated that the combustion of candles in the caisson, under the influence of compressed air, was much more rapid than in the open atmosphere. This conflicted with the result of experiments previously made by certain European scientists, which conflict induced Mr. Eads to review the conditions under which his former conclusion was reached; and now we have the statement from him that combustion is not more rapid in compressed air, but that it is more persistent than in common atmosphere. The difficulty of extinguishing the flame is the effect of compression forcing the oxygen into more intimate contact with the combustible body.

BOTANICAL NOTES.

By Geo. Vasey, Botanist.

A POISONOUS RUDBECKIA.—A few weeks ago a package of leaves and roots was received by this Department from Mr. William Kancher, Oregon, Missouri, with the statement that the plant was causing the death of many hogs in that county. An examination proved this plant to be a species of *Rudbeckia*, (*R. laciniata*,) a plant of the order *Compositæ*, and nearly related to the sunflowers. As poisonous plants in this family are very uncommon, Mr. Kancher was requested to make further investigations respecting the plant and communicate to the Department. The following is his reply:

DEAR SIR: Yours of the 15th instant, in relation to the samples of *Rudbeckia* sent by me to your Department on the 11th instant, is before me. You express a doubt of the injurious effects reported by me, and desire that I should make a closer investigation of the matter. I have accordingly made numerous inquiries among those who claim to have had hogs poisoned by this plant, and find that all agree as to the plant, and that those I sent you are identical with the plant pointed out to me as the one which did the injury complained of.

The effect claimed is delirium succeeded in a few hours by death. The hog invariably seeks water, and if he reaches it remains in it until he dies. Vomiting and purging often occur, and are considered favorable symptoms. The discharges are green. Milk and lard are the most effective remedies, and always give relief when the animal is discovered in time. A number of cases were named to me where the hogs had passed into an extreme state of delirium, but were relieved in a few hours by pouring a pint of milk and lard mixed down the throat, and restored to complete health without any other treatment. This plant is very plenty along the creeks in this county, and is among the earliest in the spring to send forth its leaves, which are eagerly eaten by hogs when turned out. It is also the latest green thing that grows in the fall of the year, and is then eaten by the hogs. During the summer months they do not eat it, probably for two reasons: the plants are then tall and not so tender, and there are many other things then for them to eat. The plant is used by some people very early in the spring for "greens," but all seem careful to avoid using it except when very tender, as it seems to be the general belief that it is poisonous; indeed, cases have been cited to me wherein the same results followed the use of it by persons as has been observed in the hog, except that none have been fatal.

We publish these statements to call attention to the circumstance and stimulate further inquiry. When used for greens, the boiling will probably dissipate the poisonous property. The leaves of many composite plants have an acrid, irritating property, and a few are known to be virulent poisons.

POTENTILLA FRUTICOSA, OR SHRUBBY CINQUE-FOIL.—In the last Monthly Report, in an article on garden-shrubbery for frontier settlers, this shrub was mentioned as one which might readily be obtained in many northern localities, and placed in the gardens as an ornamental shrub. We have received from Mr. T. S. Gold, of West Cornwall, Connecticut, a protest against its use for this purpose, for the following reasons. He says:

It is known here by the name of "hardhack," and it is the worst plant we have. It is vastly more injurious than the Canada thistle or the daisy. Scarcely known fifty years ago, it now covers, to the exclusion of everything else, thousands of acres in Northwestern Connecticut and Western Massachusetts. It delights in strong, damp pasture-land, and it is rapidly taking possession of such fields. Plowing destroys it; mowing keeps it under, and it only spreads in moist, rough pasture-land. It spreads alone by the seeds, which are blown on the surface of our winter ice and snow to great distances, and, seeding in a settler's yard, it would come up in any damp fence-corners where the seed would lodge. It is a new-comer here, and is twice as abundant as it was twenty-five years ago. Our old men well remember when it first attracted their attention. Though still unknown in some towns, it is decidedly the worst plant we have in Berkshire and Litchfield Counties.

TREES FOR CULTIVATION.—Mr. Samuel Preston, of Mount Carroll, Illinois, in a letter to this Department, writes that, in the list of forest-trees adapted to growing on the western prairies, published in the Monthly Report for August and September, the best and most important of all is omitted, viz, the American chestnut. He says:

It has generally been supposed that the chestnut could not be successfully raised upon our prairies. But my experience, and that of others, proves it to be a mistake. I have them seventeen years old, and bearing nuts, and some of the trees are 12 inches in diameter. They grow faster than the butternut, which I also have of about the same age. I have never succeeded in transplanting the chestnut, while I have transplanted the butternut with a loss not to exceed 2 per cent.

For a wind-break I would substitute Lombardy poplar for cottonwood, as being more easily raised from the cuttings, bears closer setting, has a more sightly appearance, has no cottony down to fill the air, holds its foliage much longer, and, therefore, is a much better wind-break to an orchard. I have both, and at this writing (October 14) the cottonwoods are bare of leaves, while the Lombardies are full of foliage, and look as fresh and green as in midsummer.

EXPERIMENTS WITH FOREST-TREES IN KANSAS.—In the Kansas Farmer we find an account of the condition and growth of various kinds of forest-trees on the grounds of the State Agricultural College at Manhattan. We notice that on *upland*, seedlings of the present year, of green ash, have made a growth of 1 to 2 feet; ailantus, 20 to 30 inches; catalpa, 1 to 2 feet; silver-maples, 24 to 50 inches; black walnut.

12 to 14 inches. All these are on the hills north of the college-building, in a locality much exposed to winds, and on a gravelly soil. In another part of the upland grounds, silver-maples, from seed planted in 1871, are 8 to 10 feet high; ailantus, of same age, 7 feet, and very vigorous; white elm, three years, from seed, 8 to 10 feet high; chestnut, three years old, about 3 feet. In several places on the upland were cottonwood-trees, some from chance seed and others from cuttings, all showing the vigor of this great native tree. Both the native willows and willows from cuttings received from this Department had made a very satisfactory growth.

"No one looking at the pines near the college-building can doubt the feasibility of covering the uplands of Eastern Kansas with pine-forests. Upon the whole, the experiments with forest-trees at the State Agricultural College, though on a limited scale, are highly satisfactory in their results. They show with what ease the prairie farmer may surround himself with trees from seeds and cuttings of the natives. But how many farmers will heed the lesson?"

MICROSCOPIC INVESTIGATIONS.

By Thomas Taylor.

Potato blight and rot.—The potato-disease was first observed in Germany, near Liège, in 1842; in Canada in 1844, and in England in 1845. In the following year it prevailed very extensively over almost all parts of Europe. The summer was unusually cloudy and moist, a circumstance which probably had some effect in fostering the disease. It has been estimated that the damage sustained by Great Britain and Ireland for the year 1845 was not less than £21,000,000, and in 1846 probably twice that amount. The London Times estimates that the loss sustained by Great Britain during the present year, in consequence of this disease, will be about from twenty to thirty millions sterling. Many of the best minds of Europe are now engaged in investigating the nature of the disease, and recent microscopic investigations show that, notwithstanding the fact that during the last thirty years the potato-rot has been attributed to the presence of a parasitic fungus known as *Botrytus infestans*, a new form of fungus has been lately discovered in the rotting potato by Dr. M. Payen. Berkeley and others, however, consider the form to be probably a secondary fruit (oospore) of the potato-fungus itself. Further investigations are deemed necessary, as the habits of the fungus are not yet fully understood. It has long been observed that the fungus attacks the stalks first, causing brown blotches. The disease is next transmitted to the tubers. If we take a withered stalk, which has decayed in consequence of the fungus, it will be found that the brown markings have ripened into forms similar to those discovered by M. Payen, and if a longitudinal section of the stalk is made, it will be seen that the interior is also covered with these spores highly matured and generally connected with a very slender jointed light-brown *mycelium*. The dark rounded forms are visible to the naked eye, but when viewed under a power of 50 diameters they appear to vary in size, although with this power they generally appear to be about the size of a large pea. Some are elongated, and all are of a very dark brown color.

Fig. 21. A represents various groupings on the interior of the stalk. When highly matured they are covered with dark-brown, ridged, thorn-like appendages having a slight wavy appearance.

Fig. 22. B represents a longitudinal section of the stalks; 1, 2, 3, 4, dotted ducts; 5 and 6 spiral ducts; 4 and 6 are represented as being choked up by means of budding spores, which were probably absorbed as germinal matters and matured as represented into well-defined cellular structure. Their enlargement by the mere process of budding would tend not only to fill up the whole air-space, but also to burst the cell-walls, destroying the functions of the plant. U, budding-cells passing through dotted duct-cells. S.S.S.S, the newly discovered fungi-fruit, (oospores.)

Fig. 21.

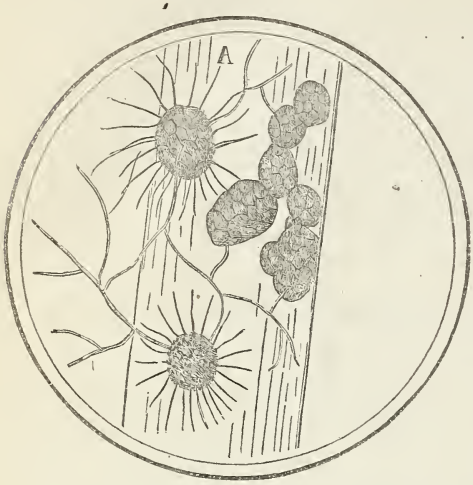
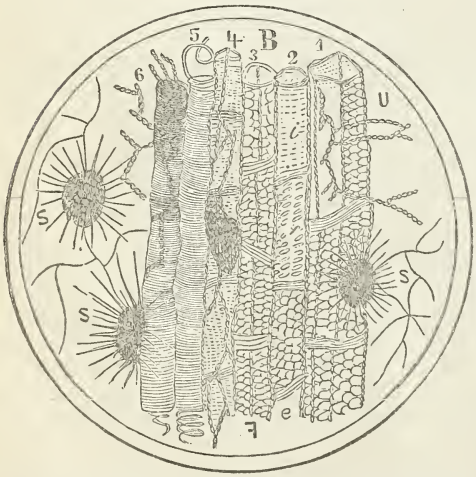


Fig. 23. C represents a highly magnified interior view of the cells of the skin of an affected potato, through which a dark jointed amber *mycelium* traverses. I have not been able to detect any form of *mycelium* traversing the potato-cells, except on the interior surface of the skin; but judging from the the habits of *mycelium*, I doubt not but that it may be found traversing the interior of the vascular bundles of potatoes highly decayed, and as described by Dr. Payen.

Fig. 24. D exhibits the appearance of a section of potato showing the starch-cells and vascular bundles, dotted ducts, and spiral forms intermixed. The largest cells shown are more highly magnified to illustrate their real character. They exhibit three belts or rings, and these represent three distinct cell-formations. The interior or third cell contains the starch.

Fig. 25. E exhibits a section of a potato; *g*, the root-stem; *a*, *a*, section of eyes; *t*, *t*, *t* exhibits the position of other eyes, but not in section. It will be seen that the inner markings exhibit a series of central circular and radiating lines leading from and returning to the root-branch *g*. These lines represent the arrangement of the vascular bundles of the potato. When a potato is cut in two sectionally, lines will be exhibited as shown, especially if a "pink-eye" potato is used; and, if exposed to the action of the air for a short time, the nitrogenous matter in the immediate vicinity of the vascular bundles blackens. I have stated that the starch is inclosed in three cells. These consist of, first, an outer cellulose, transparent cell; secondly, an opaque nitrogenous cell; and, thirdly, of an inner cell, composed of very trans-

Fig. 22.



parent cellulose, in which the starch-granules grow: *b* represents such a cell. These cells contain 30 to 40 starch-granules. C represents a broken cell from which the starch is seen as if in the act of leaving; *s* represents a portion of a broken cell; *p*, precipitated starch.

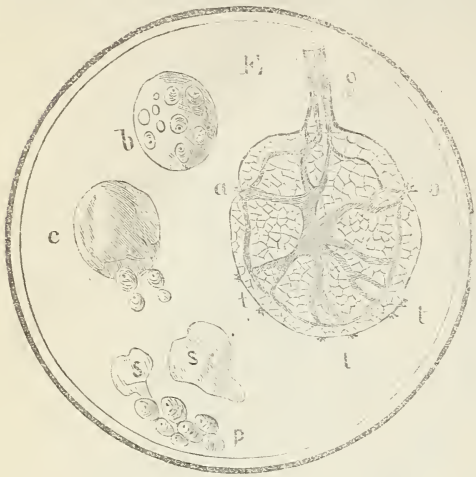
On receiving some diseased potatoes from Mr. B. P. Ware, of Swampscott, Massachusetts, under date November 1st ultimo, I commenced a series of experiments on them, having in view the detection of the mode of action of the fungus on the nitrogenous matter of the potato and other considerations. I arranged five vessels as follows: into No. 1 put a solution of sulphate of copper; into No. 2, a dilute solution of sulphite of soda; into No. 3, the milk of caustic lime in excess; into No. 4, a very dilute solution of carbolic acid in water; into No. 5, pure water. I placed in each solution half of a diseased potato. The following will show the action and results after six days' saturation. The potato in No. 1 solution was found to be perfectly preserved and deodorized, so that it could be sliced into sections, and preserved for future use. No. 2 solution failed to preserve, deodorize, or prevent the destructive action of the mycelium of fungus, contrary to expectation. No. 3 destroyed the odor on application, but in two days the lime became completely carbonated, forming a mass of chalk, when the offensive odor appeared again, and decomposition of the nitrogenous cell went on as if lime had not been present, and infusorial life, in the form of bactari, appeared in great numbers. No. 4 specimen was preserved completely. In No. 5 specimen decomposition seemed to have been slightly retarded at first, but the decomposition on the third day was in full action, and the odor became very offensive before the sixth day. When a portion of No. 3 was placed on a microscopic slide, and secured by means of a glass disk, and viewed under a power of about 75 diameters, masses of starch-grains appeared in cellulose cells all over the field, resembling *d*, Fig. 5. A reference to Fig. 6 F will show the position of those cells *a*, *d*, *t*. They are held in position in the potato by the nitrogenous cell *t*, which is held in turn by an outer and inner cellulouse cell, *a*, *d*. When a sound

Fig. 23.

Fig. 24.

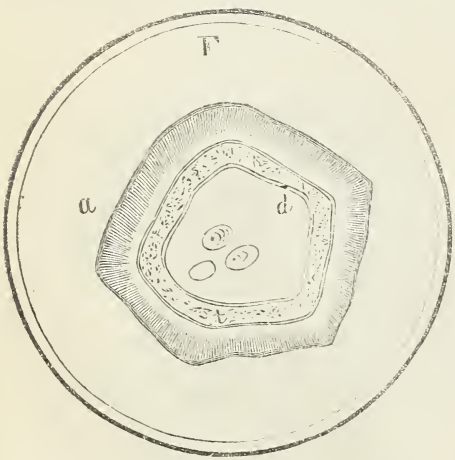
potato is grated down, all these cells are broken, because of their perfect cohesion to one another. One cell cannot be broken without breaking all. But in the case of rotting potatoes, the nitrogenous cell which binds the three together is partly removed by the fungoid action, but principally by infusorial life (*bacteria*,) which live on it. The inner or center cell containing the starch is thereby liberated. Its buoyancy is so great it floats the starch in the water. All starch in perfect cells is, therefore, washed away in the manufacture.

Fig. 25.



M. Payen, as early as 1846, in a paper read by him before the Paris Academy of Sciences, stated that the starch of potatoes affected of fungi is not injured, and during the present year Dr. Hooker, of the Kew Gardens, London, has, after a microscopic examination, made a public statement to the same effect. Starch manufacturers, on the other hand, have stated in the columns of the English scientific monthlies that, while they do not deny the statements of these scientists, they affirm that a large portion of the starch of rotting potatoes will not sink, and is consequently washed away. These microscopic observations explain the discrepancy between the savans and the practical manufacturers. To overcome this difficulty, I placed a portion of the rotting potato in a muller, and ground it into a very fine pulp. I next placed the pulp into water. After twenty-four hours I examined microscopically the precipitate and the whitish matter floating in the column of water. I found the whitish substance to be cellulose, or broken cells, while the precipitate was pure starch, showing that the starch had escaped from the cells by the extra friction. In order, then, to save all the starch of rotting potatoes, it is only necessary to grind them with such improved machinery as will reduce the potatoes to a finer pulp. Martin McKinzie, of Boston, wrote to the Department, under date November 1, ultimo, stating that, in a field near his residence, Early Rose and Jackson White potatoes were planted this last season adjoining each other; the first, Early Rose, proved nearly an entire failure from blight—fungus; while the second, or Jackson Whites, grew to perfection. Not the slightest appearance of blight was manifest in any instance on them. The writer further

Fig. 26.



states that the conditions of planting, manuring, and soil were practically the same in each case. Facts similar to these have frequently been made from time to time, and form an important point for investigation, and conclusively show that the condition of the potato itself has as much to do with the rot as the fungus, *Botrytus infestans*. It has been frequently stated "that the potato, from high cultivation, has run out, and that recourse should be had to the seed of the plant as a means of renewing the crop." The terms, "high cultivation," if they have any practical meaning, must signify that an internal organic structural change has taken place. It may be that the vascular bundles occupy a larger space in the highly-cultivated potato, so called, than they did when they first became an object of public interest; if so, this alone might in part explain one of the great causes of potato-rot. The fact that the disease in the potato-plant always appears first in the vicinity of the vascular bundles, or air-cells, would seem to fortify this idea, and investigations in this line might prove profitable.

An abundance of moisture and heat will produce rank growth. The first structure formed is cellular, which includes the vascular bundles or air passages, and other forms of cellular tissue. Nitrogenous cells next follow, as a lining to cellulose cells, and, in the case of the potato within this cell, again forms a second cellulose cell, which becomes the starch-cell, and the more likely is this the mode of action, from the fact that starch may be made from the nitrogenous matters, while from the former the latter cannot be made. It is self-evident that the Jackson Whites, in the case alluded to, were proof against the attacks of fungi, although surrounded by it, and the inference might be drawn that the Jackson Whites seed was in a more favorable condition when planted than was the Early Rose seed, and hence the assimilations of the plant were not retarded. Still, the unfavorable climatic conditions under which they grew would change in some degree the relative organic internal structure. After several such changes were effected under the conditions stated, viz, extraneous moisture and high temperature, the Jackson Whites would probably be as liable to disease as the other variety. Seed will not come to perfect maturity under adverse conditions, especially plants that are very susceptible to climatic changes. Seed of the same stock, attaining its perfect development under more favorable conditions of sun heat and moisture, all other conditions being equal, would probably give much more favorable results, changing probably the relative proportions of the vascular bundle, &c., to the parenchyma cells. Judging from analogy, I am of opinion that more attention should be paid to the climatic conditions under which the seed was produced. Selections of seed made for a series of years from favorable climatic districts would have a great tendency to produce that healthy form of tuber desired for seed purposes. The savans of Europe, according to the English monthlies, have nothing better to offer as a remedy but the cutting off the stalks the moment the brown blotches appear. The climate of Great Britain and Ireland, as a rule, is very unfavorable for the growing of tubers from seed. The climate is frequently extremely moist. *Botrytus infestans* on potato fungus is always present in damp places, living on weeds, &c.; its constant presence is well known to micologists. Notwithstanding that *Botrytus infestans* is truly parisitic, its ravages are modified by climatic conditions.

FACTS FROM VARIOUS SOURCES.

AGRICULTURAL EXHIBITION IN NEW SOUTH WALES.—The Agricultural Society of New South Wales proposes to hold a Metropolitan International Exhibition in the Exhibition Building and Prince Alfred Park, Sydney, commencing April 22, and closing about 3d of May, 1873. The council having charge of this exhibition most cordially solicits agriculturists and manufacturers of every class in the United States—especially of every description of machinery and agricultural implements—to contribute specimens to the exhibition, with the view of opening with that colony a valuable market for the sale of the various manufactures of this country, which stand deservedly high in that interesting and thriving colony, to which, with the Australian and adjacent colonies, it is predicted a large and most profitable trade will soon be opened, owing to the fact that our facilities for reaching those markets are much greater than those of any other country, shipments being made from San Francisco direct, either by sailing-vessels or steamships, at least once in each month. Awards will be made to exhibitors, solely on the merits of their articles, without regard to the country from which they came. The Department has been favored by Mr. Jules Joubert, secretary of the society, with schedules of prizes, which are unusually liberal.

MILK PRODUCT OF AN AYRSHIRE DAIRY.—E. T. Miles, of Maplewood farm, Worcester county, Massachusetts, furnishes for publication the following statistics relative to the entire dairy of Ayrshires he has kept for the three years ended July 1, 1872:

	Age, July 1, 1872.	Weight, March 1, 1872.	Number of days in milk.			Weight of milk in pounds.		
			1869–'70.	1870–'71.	1871–'72.	1869–'70.	1870–'71.	1871–'72.
Miller 2d	13	1,110	284	279	288	6,588¼	4,797	5,692¾
Beauty	11	985	315	365	298	8,011	7,922¼	7,555½
Emma	11	1,070	284	307	280	5,841	5,930	4,248½
Daisy	11	1,125	321	273	263	6,953	5,951	5,611½
Daisy	10	1,028	313	304	302	6,618	6,145½	6,300½
Myrtle 1st	5	995	265	267	288	4,819	5,950¼	7,047
Cleopatra	5	1,085	301	309	324	5,178	6,021½	5,764½
Maud Muller	5	1,200	.....	.....	295	.....	.....	5,493
Lady Burns	5	1,073	163	307	284	3,190	5,102¼	4,785
Ellen Douglas	4	848	.....	166	267	.....	3,281	5,313½
Myrtle 2d	3	973	.....	.....	114	.....	.....	2,352¾

The largest product was by Beauty, in 1869–'70, being 8,011 pounds, or, reckoning 8¾ pounds to the gallon, 915.54 gallons; averaging for the 315 days she was in milk, 25.43 pounds, or 11.6 quarts, per day. The smallest product was by Myrtle 2d, (three years old,) in 1871–'2, being 2,352¾ pounds, or 269 gallons; averaging, for the 114 days she was in milk, 20.64 pounds, or very nearly 9½ quarts per day. It is worthy of notice that Beauty was only 12 pounds heavier than this heifer, and that there was but one other in the lot lighter than she. In 1871–'72 the total yield of the 11 cows was 56,164¼ pounds, or 6,418.9 gallons; average per cow, 5,105.9 pounds, or 583.5 gallons; average season in milk, 273 days; daily average for each cow, 15 pounds, or a little less than 6.9 quarts.

This is at the rate of 13.97 pounds per week in June; 11.76 pounds in July; and 9.52 pounds in August.

COMPARATIVE AMOUNT OF CREAM FROM DEEP OR SHALLOW SETTING OF MILK.—Thomas Edge, of Chester County, Pennsylvania, has made the following experiment: After mixing milk, the quantity not stated, so as to have it homogeneous, he divided it into two equal parts, putting as much in one can, 12 inches in diameter, 20 inches deep, as in 6 shallow pans. He added three pints of water to each can, and a half pint to each pan, and put the cans and pans into cold spring-water, so that the surface of milk in each was level with the surface of water. The skimmings of cans and pans on six successive days were done at the same time. The daily amounts, as given, make the total of cream from the cans, 68 pounds; from the pans, 48⅞ pounds; showing an excess of 19⅛ pounds, or a fraction over 39 per cent. of gain over the pans, though the experimenter states, not in accordance with his other figures, that the excess was 18⅝ pounds. These two lots of cream being churned on the same morning, that from the cans yielded 14 ounces more butter than that from the pans; the respective quantities of butter are not given. During the experiment he noticed that the cream from the cans was less solid and tenacious, more easily strained, and thickened less after straining, than that from the pans; also, that if both lots were not skimmed till the pans were ready, that in the cans soured and sometimes thickened, and no more cream rose after skimming; but if both were skimmed when the cans were ready, a small amount of cream would subsequently rise in the pans. On the other hand, members of the Solebury Farmers' Club, Bucks County, Pennsylvania, made experiments, in which the difference in depth was much less, with the following results, Henry Wildman, beginning June 3, mixed and divided into two equal parts the milk of fourteen milkings, the aggregate weight of which was 555 pounds. One-half was set 6, the other 2½ inches deep. The cream from the deep set made 12 pounds 8 ounces of butter; from the shallow set, 13 pounds 3 ounces, a difference of 11 ounces in favor of the latter. The temperature and other particulars affecting the result are not stated.

During the week following May 27, E. Reeder put, each morning, 24 pounds of milk into two pans 4 inches deep, and 24 into four pans 2½ inches deep; each evening, 36 pounds into three pans 4 inches deep, and 36 into six pans 2½ inches deep, making a total of 840 pounds. The temperature of the milk-room, carefully noted, ranged from 56° to 60°, and the milk stood forty-eight hours before skimming. From the deep-set, 43 pounds of cream were obtained; from the shallow-set, 46 pounds. The time required for churning the cream, put into the churn at a temperature of 56°, was 18 minutes for that from the deep-set and 17 for that from the shallow-set. The butter obtained from the former weighed in the lump, 19 pounds; from the latter, 21 pounds; after being worked and formed into pound-prints, that from the former weighed 16 pounds and 12 ounces; that from the latter, 18 pounds and 9 ounces; a difference of 1 pound and 13 ounces in favor of the latter. The milk was the mixed product of 5 cows, and the butter averaged 1 pound for every 24 of milk.

E. Michener states that he "set four milkings 5 inches deep and 3 inches," and obtained from the deep-set 6½ pounds of butter; from the shallow-set, 7 pounds, but gives no further particulars, except the statement that his family considered shallow-setting less trouble than deep.

THE TWO SYSTEMS OF AGRICULTURE AT THE SOUTH.

A careful observer reports the following facts respecting two intelligent, enterprising planters in the same locality in Louisiana: They

were possessed of equivalent fortunes, and of plantations about equal in size and productiveness before the war. At its close, both were stripped of everything except their desolated lands. One of these planters fully appreciated the necessity of adapting himself to the new order of things. Recognizing it as his first duty to provide for the immediate wants of his family, and remembering that his neighbors who were exclusively occupied in raising cotton must have food for their families and hands, he gave his first attention to the raising of products for home consumption—corn, potatoes, garden vegetables, orchard, and small fruits; clover for stock and food for swine. Cotton and rice had a place in this diversified agriculture, but they were made subordinate to those products which every family must have for the table. Beginning in th s way, on a small scale, he could avoid a great debt, and its consuming canker of interest; get along with a small amount of help, and have constant and remunerative employment for that; secure his family a comfortable support independently of prices in the market, and be sure of a ready sale for whatever surplus he raised. Year by year he has made steady upward progress; his fruit trees have come more and more into bearing; his clover-fields have been extending; and his means for increasing the productiveness of his lands have been multiplying. To-day, if he has not more wealth, his family have more comforts and luxuries, he has more ready money, and is more independent than before the war. The other could not overcome his attachment to the old system of exclusive cotton-planting, but has steadily adhered to it. "In fact, he has taken up his vegetable-garden with the adored staple." This plan necessitated the contraction of a large debt, with its accumulating interest, from the very beginning. This has grown as steadily as his neighbor's gains, and the probability is that his now heavily mortgaged plantation must pass out of his hands before another season.

Need of diversified industry.—Mr. H. D. Clayton, president of an agricultural society at Clayton, Alabama, reports that in that section cotton has hitherto been almost the only agricultural product. A few "scrubby" cattle are raised, but of the stock, horses, sheep, and hogs, possessed by the owners of the soil, 99 per cent. are bought elsewhere. Convinced that greater profit, and much greater independence of the ravages of insects, of the vicissitudes of the season, and of commerce, would result from raising a variety of agricultural products instead of cotton alone, he is endeavoring to introduce a change to that effect.

Conditions of Success in Cotton Culture.—A correspondent in Jefferson County, Arkansas, who has been "a cotton-grower for thirty years," furnishes some valuable hints respecting that branch of husbandry. Having had, this season, an opportunity to examine extensively fields of growing cotton in Tennessee and Northern Alabama, as well as in his own section, he reports "*fair crops where the land was well cultivated*, and indifferent ones where it was not." In the latter case the long-continued drought and intense heat of the season greatly injured the crop in two ways: first, the roots did not strike down deep, but grew near the surface; and, second, the slender growth occasioned by shallow and poor cultivation left the surface more exposed to the heat of the sun. The well-cultivated fields had deeper and more vigorous roots, and the surface was better shaded. There has been much defective cultivation, he represents, for the reason that the freedmen, who have done the work, have been compelled to use poor teams and plows, for the want of means to buy better ones. This is one among many illustrations which show, directly or indirectly, that every degree of improvement in the condition of the laboring class will result in advantage

to their employers, not less than to themselves. The drought caused the picking to be earlier than in an ordinary season, and hence the new crop begins to arrive at the receiving ports earlier—a fact by which merchants at a distance are liable to be misled, since in seasons free from drought, which make cotton through August, early receipts are indicative of a large yield. On the other hand, in estimating the amount of the crop, it should be remembered that in dry seasons like this, 100 pounds of seed-cotton will gin more lint than in an ordinary season, because the seed is lighter. Our correspondent concludes as follows:

The information, respecting the cotton crop, gathered by the Department of Agriculture is becoming reliable, and therefore valuable to the planters. The seed most valuable to growers is that of the finest variety of multiboll cotton. The fairs ought to offer premiums for cotton-stalks with the bolls on them and the cotton in the bolls, not for clean cotton in the bale. The latter indicates nothing but "pains taking," which may be done by any one, and a premium for it results in no benefit to agriculture. But the seed of a fine variety of cotton is to cotton-growing what the importation of fine stallions or bulls is to stock-raising. They may improve all the stock of the State and their offspring become immensely valuable. Our reliable cotton-belt is between 32° 30′ and 35°. This belt grows the short-staple and the bulk of our crop. The long-staple crop with us is very small. Asia and Africa have cotton climates, but not the seasons and the intelligence. Egypt grows a good quality of what we may call long-staple, but not equal to our islands off the coast of Georgia. We have the finest cotton country in the world, and are the most intelligent people who grow cotton. We must, therefore, make our own seed. It cannot come from anywhere else. Our best multiboll seed must be produced in our own fields. Selections and crossings continued long enough will secure the desired result. Hence the propriety of offering premiums for *seed* at our fairs.

An Active Farmers' Club.—The Concord (Massachusetts) Farmers' Club now numbers thirty active members, nearly all of whom are directly engaged in farming. The club holds weekly meetings at the houses of the members, a subject for discussion being assigned for each meeting. The following is a list of the subjects to be discussed, in the order named, during the coming winter:

Wool and mutton—can they be grown profitably by Concord farmers? marketing and care of milk; potato crop; pastures; resources of the farm in fertilizing material; alternation of crops reduced to a system; milk—how much does it cost to make a can in summer and winter? farming to-day compared with twenty years ago; insects; position of the American farmer; means for improving the soil, and the best method of composting manures; care of milch cows, and best method of feeding; crops of 1872 compared with former years, and their money-value; hay and its substitutes; best method of curing and feeding; theory and practice of agriculture; a summer's experience in gardening; soils, variety, and to what best adapted; advantages of a country home; asparagus; trees of Concord, indigenous and introduced; thunder-showers; history of agriculture; roots—best method of raising them, and their value for feed and market; improvement in houses.

Farmers' Clubs in Nova Scotia.—An act has been passed by the provincial legislature of Nova Scotia for promoting the formation of farmers' clubs thoughout that province. The board of agriculture of the province has for the purposes of the act been constituted a bureau of agriculture, and has been authorized to establish societies, to be called farmers' clubs, in all the different counties of Nova Scotia. The clubs are required to prepare statistics in all the branches of agricultural and horticultural industry in their several counties, and to publish, in such manner as to secure the widest circulation, all such reports, essays, and other information as they may procure and adjudge suitable for publication. The bureau is to prepare papers from time to time for the consideration of clubs, embracing such subjects as drainage, fertilizers, improvement of swamp-lands, rotation of crops, lands best adapted for cereals, improvement of stock, &c. Premiums are to be offered for essays on questions of scientific inquiry relating to agriculture and horticulture; on

the raising and improvement of stock, on improvements in agricultural implements and machines; and generally for excellence in any branch of agricultural, horticultural, or floral industry; and the bureau is annually to epitomize the results arrived at in the various discussions before the clubs, and cause the same to be published for general sale and distribution.

AGRICULTURAL PRODUCTION IN AUSTRALIA.—The official reports of Australia make the aggregate area of land under tillage, for the year ending March 31, 1872, 937,220 acres; an increase of 28,205 acres over the previous year. The amount of wheat produced is stated at 4,500,795 bushels; oats, 3,299,889; barley, 335,506; maize, 30,833; beans, millet, and sorghum, 173,217; rye, &c., 8,496; green crops, exclusive of those in kitchen and market gardens, 159,093; hay, 144,637 tons. Total product of grain, 8,348,736 bushels, being an increase over the previous year of 2,892,159 bushels. Average yield of wheat per acre, 13.45 bushels; oats, 18.76; hay, 1.4 tons. The yield of wheat in the entire colony for the last ten years is given as follows:

Year ending March 31.	Area in acres.	Gross product in bushels.	Average of bushels per acre.
1863	162,009	3,008,487	18.6
1864	149,392	1,338,762	9.
1865	125,040	1,899,378	15.2
1866	178,628	3,514,227	19.7
1867	208,588	4,641,205	22.3
1868	216,989	3,411,663	15.7
1869	259,804	4,229,228	16.3
1870	288,514	5,697,056	19.8
1871	284,167	2,870,409	10.1
1872	334,609	4,500,795	13.45

The above gives an average product per acre for the ten years of 15.9 bushels.

FOREIGN GRAPES IN TEXAS.—A correspondent of the Department in Austin, Texas, states that since the war the attention of agriculturists in that State has been largely directed to the culture of the grape and other fruits. For a number of years, he says, experience has shown beyond a doubt that the climate of Texas is very favorable to the culture of the foreign grapes. A number of varieties are under cultivation, and have produced very fine fruit, even in years when the native grape has been killed by late spring frosts.

HAY IN TEXAS.—A correspondent of the Department in Millheim County, Texas, writes us that hay in large quantities has been harvested in that county the past season, which will be of great service the coming winter, the prairie pastures having been almost destroyed by the drought.

THE LUMBER-TRADE OF FLORIDA.—It is reported that the number of vessels freighted at Pensacola with timber for European ports in the year ending October 1, was one hundred and sixty-six, with an aggregate tonnage of 139,081; the total of cubic feet thus exported was, of hewn timber, 5,790,072; sawn, 1,500,029. The corresponding statistics for the year preceding were one hundred and fourteen vessels, with a tonnage of 95,489, and a total in cubic feet of hewn timber, 4,063,327; sawn, 1,057,455. The total of feet cleared for American ports in the year

ending October 1, was 45,953,574. Of these 9,303,706 were shipped to Boston, 6,474,343 to New York, and 3,651,547 to Philadelphia. A prosperous though less extensive lumber-trade has also been carried on the past year at Jacksonville, Fernandina, and some other points.

THOROUGH-BRED STOCK IN NOVA SCOTIA.—The friends of agriculture and the public authorities in Nova Scotia are making a laudable effort to encourage the more general diffusion of thorough-bred stock throughout that province. The board of agriculture, under the authority of the provincial legislature, have imported a number of entire English draught-horses, Short-horn, Ayrshire, and Devon bulls, bull calves, and cows, and Cotswold, Leicester, Shropshire, and Southdown rams and ewes, which were offered for sale at public auction at Halifax on a recent occasion, under the restriction that the animals were to be kept in the province for breeding purposes. The idea of improving the stock of the country by importing pure breeds and selling them at auction is borrowed from the Belgians, who have long been in the habit, under the countenance and direct support of the government, of importing Durham bulls and heifers, and disposing of them by public sale in the different provinces of the kingdom.

FLUKE IN SHEEP.—The disease known in common parlance as "the fluke," from the popular name applied to the entozoa found in the livers of those afflicted, is prevailing to an alarming degree in Australia. In consequence of the reticence of stock-owners on the subject the extent of the malady is not stated; but it is no secret that one large stock-owner, out of 44,000 sheep, has lost 30,000 the past year, and that a flock of 3,000 flukey ewes produced only 90 lambs. Through the unwillingness of stock-owners to investigate the matter and seek for a remedy, the disease has spread unchecked, until in some parts of the colony it is said to be difficult to find a sound sheep for the butcher. In portions of the New South Wales back country, where the negroes occasionally steal a sheep and feast upon it when half raw, it is said to be no uncommon occurrence to find the natives dying of fluke. In Tasmania the disease is likewise very fatally prevalent.

EXPERIMENT IN PLOWING BY STEAM-POWER.—On the 8th of November, on the seed-farm of D. Landreth, at Bloomsdale, near Bristol, Bucks County, Pennsylvania, a trial was made of the "Williamson road and field steamer," under the supervision of the inventor, D. D. Williamson, of New York. The experiment is reported as entirely successful. Mr. Williamson's invention is an improvement on the "Thompson road-steamer" of Great Britain, consisting mainly in the attachment of vulcanized-rubber tires in such a way as to prevent the wheels from sinking in soft soil, or compressing it to an injurious degree. The report represents that the steamer consumes about one ton of coal per day; requires for working it an engineer, fireman, and "a boy to drive a water-cart;" can be used for driving thrashing and other machines; will draw from twenty to thirty tons of freight in wagons on any fair country road; will turn on a space not exceeding in diameter its own length; will plow, on land suitable for cultivation by steam, from one to three acres per hour, according to length of land and depth of furrow; and costs, with plow and tackle complete, $5,000. The following extracts are from a description of its action by an eye-witness:

No team of horses could have turned, backed, and stopped with more facility and certainty. It was run up the steep bridgeway of a barn, having an elevation of 1 foot in 5, backed down, and run up again with the greatest ease and facility. For a further confirmation of its capacity a couple of large farm-wagons were coupled behind it, in which about twenty of the guests were seated for a ride. It trotted off with us on the public road toward Bristol, at the rate of six to seven miles per hour; went through

gates, turned in at bars, crossed soft gullies, went up sharp hillocks, crossed at a sharp elevation the railroad-track, and down again on the other side, and, making a short turn, brought us back through a field of fifty acres, which had been plowed with it, to the place of departure. This plowing was beautifully done, and we were informed at an average depth of 9 inches, much of it being 12 inches. No more accurate or level furrows, as it appeared to us, could be made by any plowman with a well-trained team of horses.

After being uncoupled from the wagons it was attached for a trial of plowing to the Williamson gang-plow, consisting of five secured to one frame. * * * On the way to the field the plows followed the steamer as erected as a two-wheeled cart. Not a moment was lost in getting to work. The field selected was an old tough sod with a steep grade in the center. The tripping of a lever by the fireman, which he performed from his station at the boiler, let the plows into the ground, and away rolled the steamer as straight as an arrow, with the tough sod-furrows rolling over behind like so many waves. The work seemed perfect, each furrow being mechanically correct and alike in width and depth. At the ascent of the grade in the middle of the field, no diminished speed was observable, the power seeming so arbitrary and irresistible that no ordinary field obstructions could have resisted its continuous progress. Arrived at the end of the field, the fireman pulled another rope, and out shot each one of the plows, the steamer spun around on one wheel, ran across the headland, and turning into a new land, was instantly at work on the "turn-bout." There was no hitch, no slipping or backing, but a simple, silent triumph of good, sensible engineering. We are thus particular in describing exactly what we saw and was witnessed with surprise and pleasure by the whole company, because it *demonstrated* that the experiment of steam on the farm and on the road was successful in every point.

METEOROLOGY IN AGRICULTURE.—The powers of the Signal-Office have been enlarged by the act of Congress of June 10, 1872, and extended to the more immediate interests of agriculture. Appropriation is made by that act for the expenses of storm-signals, by telegraph, announcing the probable approach and force of storms throughout the United States, for the benefit of agriculture as well as of commerce. To aid in the accomplishment of the object, the Chief Signal-Officer has issued a circular to agricultural and horticultural societies, inviting any suggestions or recommendations to perfect the system now established, and to render it more directly useful to the agricultural interests, and suggesting that the best mode in which such societies can co-operate with the Signal-Office in the matter is by the appointment of permanent committees to confer occasionally with the Chief Signal-Officer, and to take, in conjunction with him, such steps as may be deemed desirable. A large number of societies have already responded to the request of the Signal Officer, and appointed the committees as proposed. It is not to be understood that these committees are to take meteorological observations or make reports for the signal-service, the only object being to obtain their practical co-operation through correspondence and conference.

DESTRUCTION OF COTTON BY FLOOD.—Our correspondent in Mobile County, Alabama, reports that a recent flood has been very destructive to cotton, the principal agricultural product of that county. Is is estimated that it destroyed from 500,000 to 600,000 bales, which would otherwise have been shipped from Mobile. The falling off thus occasioned is so great as to somewhat cripple the commerce of that port.

AGRICULTURE IN ALAMEDA COUNTY, CALIFORNIA.—This is a small county lying east of San Francisco Bay, and having a population of about 35,000, with 6,474 registered voters. The present assessed value of its real estate is $27,486,940; of its improvements, $5,498,020; of its personal property, $6,748,665. In 1871 it had of land inclosed 94,790 acres; cultivated, 124,546 acres; upon which were produced, bushels of wheat, 429,443; barley, 204,580; oats, 29,947; rye, 300; corn, 23,485; buckwheat, 789; peas, 2,925; beans, 3,110; onions, 36,400; tons of potatoes, 9,022; beets, 870; turnips, 115; pumpkins and squashes, 594; hay, 8,875; pounds of flax, 13,500; hops, 6,500; wool, 247,840; butter,

226,250; honey, 750. In 1872 it had under cultivation, of wheat, 115,408 acres; barley, 67,837; oats, 858; potatoes, 968; total under these four products, 185,071 acres, being 60,525 more than were occupied by all the grain and vegetable products cultivated the previous year. In cultivated trees it has of apple, 50,514; peach, 13,520; pear, 16,164; plum, 11,858; cherry, 28,519; nectarine, 3,300; quince, 1,468; apricot, 3,427; fig, 817; lemon, 62; orange, 82; olive, 587; prune, 3,066; mulberry, 1,204; almond, 152,956; walnut, 3,576; grape-vines, 223,102. In live stock it has, of cattle, 22,528; horses, 6,711; mules, 631; asses, 14; sheep, 38,360; Cashmere and Angora goats, 46; hogs, 2,556; hives of bees, 300.

CORK-OAK.—A correspondent, dating at Alhambra, California, reports that the acorns of the cork-oak, distributed by this Department a few years since, have done well, and expresses the opinion that a new supply would be carefully improved in view of prospective profitable results.

THE RICE CROP.—Lafourche, one of the principal rice-growing parishes of Louisiana, has produced this season, as reported, about 15,000 bushels of clean rice. This is about equal to the crop of the same parish in 1869.

HONEY IN COLORADO.—It is reported that two years ago Mr. N. O Stewart, of Jefferson County, started with two hives of bees, which have now increased to 21 hives, and have yielded the past season about 2,500 pounds of honey, worth from 40 to 50 cents per pound. Mr. Stewart has never fed his bees, and they have cost him little or no attention.

PRODUCT OF ONE KERNEL OF WHEAT.—Our correspondent in Merriwether County, Georgia, states that a "volunteer" kernel of wheat, which came up in the garden of Hon. O. Warner, this season, produced 99 heads and 3,058 kernels, the largest heads having 75 each. It was an early red, bald variety, and matured about the 1st of June.

WINTER AND SPRING WHEAT IN WISCONSIN.—A correspondent in Sauk County represents that the Diehl wheat (winter) received from this Department has proved hardy and productive, yielding on new ground 40¾ bushels, and on old 25. It is so well appreciated that he readily sold his whole crop at $2 per bushel for seed. He believes that henceforth Wisconsin, in part at least, must raise hardy varieties of winter, instead of spring wheat, and must keep the soil in good condition by the use of fertilizers. Many hope to obviate the failure in raising spring-wheat by a change of seed from one locality to another, but he is convinced that the difficulty is too radical to be remedied in that way: that it results from exhaustion of soil by continuous cropping, regardless of the laws of compensation.

FARM-ANIMALS IN OHIO.—The official report for 1872 gives the total of farm-animals in Ohio, compared with year 1871, as follows: In 1871, number of horses, 711,349; cattle, 1,646,440; mules, &c., 21,986; sheep, 4,302,904; hogs, 2,164,403. In 1872, number of horses, 718.157; cattle, 1,761,623; mules, &c., 22,958; sheep, 4,464,898; hogs, 2,315,554. Increase of horses, 6,808; cattle, 115,183; mules, &c., 972; sheep, 161,994; hogs, 151,151.

CULTIVATION OF CORN.—Shoemaker & Robinson, of West Whiteland, Chester County, Pennsylvania, claim to have produced, the present year, on 10 acres and 92 perches of land, 1,005 bushels of corn, allowing 70 pounds of ears to the bushel; 70 pounds were shelled, and it made one bushel and two quarts. During the summer of 1871, the field was

limed at the rate of 60 bushels to the acre. In the winter of 1872–'72 it was well covered with barn-yard manure, which was plowed under in April, scored about 4 feet scant each way, and planted with three grains and compost in each hill, in the first week in May.

CATTLE-PLAGUE IN FRANCE.—The cattle typhus or plague is represented as having almost entirely disappeared in France, after having cost the country at least 57,000 head of cattle, approximately estimated at 15,000,000 francs, or $3,000,000, the average value of each beast victimized being 266 francs. Forty departments, including about one-half of the territory of the country, suffered from the disease.

COLUMBIA COUNTY, NEW YORK.—Lying in the valley of the Hudson with ready access to market, and possessing varieties of soil which adapt it to the production of all kinds of grain, vegetables, and fruit, Columbia County ought to be among the first in agricultural progress and prosperity. As yet, few advances have been made upon old methods, but subsoiling, underdraining, and kindred improvements are beginning to engage the attention of farmers, agricultural journals are spreading among them, and there are other indications that the era of progress is at hand.

TREE-CULTURE IN KANSAS.—Willow-cuttings received from this Department, and set last spring by the Kansas State Agricultural College at Manhattan, Riley County, are reported as having been measured, October 15, with the following results: Height of *Salix babylonica*, 8½ feet; *S. japonica*, 6½ feet; *S. acutifolia*, 6 feet; *S. moschata*, 5 feet. There were other cuttings from the Department, but the above were the most thrifty. Lombardy poplars, from cuttings set last spring, were 6 feet high. Among upland willows the *Salix triandra* (from the Department) had grown over 4 feet. On the whole, the results of experiments with forest-trees at the agricultural college are reported as highly satisfactory. A correspondent in Linn County also reports very favorable results from seeds of ailantus and honey-locust trees received from this Department. The plants are represented as very thrifty; also as growing twice as rapidly in red as in "a very rich black soil."

FARMING IN LOUISIANA.—An occasional correspondent, writing from Morehouse Parish, represents that, in that section, the present generation of laborers will not realize that the land now needs different and more thorough cultivation than when new; and so are likely to go on, to the end of life, "making corn and cotton, just as old masters did when they were young." This season, on a place which he superintended, he made, from 150 acres planted in cotton, 175 bales; but other places worked by him, to which he could not give personal supervision, did not yield half as well. He reports that in that section cotton, now housed, turns out better than was anticipated, and corn enough has been raised to supply their own wants. He adds:

> I and two others cut hay last spring, on a prairie above here, (Bayou Bartholomew,) which is very fine. We had the first mower ever brought into North Louisiana. I suppose we cut 100 tons. There is enough on the prairie to supply the rough forage for the whole parish. It contains 5,000 acres or more, covered with grass from knee high to as high as the head of a man on horseback.

WHEAT-EXPORT OF CALIFORNIA.—The exports of California wheat, from the first arrivals of the new crop to December 1, amounted to five and a half million centals, or over nine million bushels, freighting nearly 150 ships. A score of vessels, at San Francisco, were awaiting cargo, and the daily shipments averaged 1,000 tons. But small inroads, however, had been made upon the inland accumulations of grain. Flour

shipments, this fall, have been quite limited, being confined mostly to a few thousand barrels of low-priced superfines sent by steamer to Hong-Kong.

FLUCTUATIONS IN THE PRICES OF SHEEP AND LAMBS.—The Mark Lane Express gives a table showing the range of prices for sheep and lambs sold at the Lewes sheep fair, England, for the years 1840–'50–'55, and from 1859 to 1872 inclusive. The highest price is for this year, ranging from 40 to 72 shillings for sheep, and from 26 to 48 for lambs. The largest for sheep was in 1850, being from 20 to 35, lambs ranging from 15 to 25; but in 1868 the latter ranged from 14 to 26, sheep selling at 20 to 41. For the whole period the average price was, for sheep 38*s.* 6*d.*, for lambs 26*s.*, the extremes of annual averages being, as above, for sheep 56*s.* and 27*s.* 6*d.*, and for lambs 37*s.* and 20*s.*

DISEASES OF SHEEP IN OREGON.—A correspondent in Lane County writes as follows:

> Our sheep, in Oregon, have new, and, to me, strange diseases. One, here called "leeches in the liver," is prevalent and fatal. The liver is filled with leeches, resembling those found in water, which appear to be at home in sheep, deer, and cattle. Thousands of sheep die annually in our State from their presence. Symptoms: The sheep become stupid, look sorry, fall away in flesh, the head swells about the nose, and the skin of the jaw hangs down like a sack or bladder filled with water. "Staggers," another disease which I have not found in the books, is attended with the following symptoms: The sheep begins to shake its head, and scratch its ear with its hind foot; subsequently it goes round and round, falls down, gets up, falls again and again, looks wildly out of the eyes, and seems to be on a "regular bender" for one and sometimes for four or five days. I am told that sometimes sheep die of "staggers," but cannot vouch for the statement. Can any of your correspondents point out the proper names and remedies of these diseases?

SUCCESS IN GROWING SILKWORMS.—The experiment of Mr. Romulus Bonhomme in growing silkworms, at Los Angeles, California, the past season, is reported as very successful. The mulberry trees used are of the alba and moretta varieties, of which he has 16,000 trees, four and five years old. He has tried the Philippine, which he regards as nearly equal to the alba, and the multicaulis, which he has abandoned as comparatively worthless. He sets his trees in rows 16 feet apart both ways; has tried 8 feet, but finds that too near, the leaves of trees so crowded not being healthy for worms. From four ounces of eggs he obtained 445 pounds of cocoons. His loss of worms was less than 1 per cent. of the number hatched. During the first and second stages of growth he feeds from young trees; the third and fourth, from older trees and leaves. During the first three stages he feeds three times a day; during the fourth, five times a day and twice at night. He finds that the worms from one ounce of eggs require, to perfect their growth, 1,200 pounds of leaves, while in Italy and France the same quantity requires from 1,800 to 2,000 pounds. He began feeding the French yellow variety on the 15th of April, and the cocoons were completed in thirty-six to forty days. As his object was the production of eggs, his cocoons are all perforated. The eggs, of which he has 400 ounces in excellent condition, are estimated at $6 per ounce. He is confident that for the successful culture of the silkworm, the climate of Los Angeles is nowhere surpassed.

BEET-SUGAR IN CALIFORNIA.—The Alvarado beet crop of 1870 yielded less than 8 per cent. of sugar, the whole amount being 500,000 pounds; that of 1871 yielded about 8 per cent., and amounted to 750,000 pounds; that of 1872 yields 8¼ per cent., and it is estimated that the whole product of sugar will be from 1,000,000 to 1,250,000 pounds. It is reported that the home product, as yet in its infancy, has already

had the effect to reduce the price of No. 1 granulated sugar in California 1½ to 2 cents per pound, and to make it 1 cent per pound lower, on the average, than in the New York market.

CHEESE-MAKING IN TEXAS.—A Mr. Brown, who emigrated from Jefferson County, New York, to Erath County, Texas, began there experiments in cheese-making, in 1869. With rude apparatus, he made, from 35 common Texas range cows, 1,000 pounds; lost 700 pounds of it, and sold the rest for 35 cents per pound. With better apparatus, obtained from the North in 1870, he made, from 40 cows of the same grade, 2,000 pounds, and lost about 300. Inferring that the loss was not owing to climate, cows, or feed, but to improper management of the business in that untried climate, he improved the winter following in gaining information from the best authorities on cheese-making; procured Bavarian prepared rennet, and last season tried again, and with very satisfactory results, not losing 10 pounds. He estimates that with good management an ordinary Texas cow will make, during the season, 100 pounds of cheese, besides rearing a calf, and that at least $40 worth of pork may be raised on the whey from her milk, properly fed out.

AGRICULTURE IN IDAHO.—Mr. J. H. Evans, Lewiston, Idaho, writes to this Department, under date of October 11, that it was thought until the last few years that mining was the only pursuit that would pay in that upper country; but that the last three years have developed the fact that there is a vast agricultural country along the table-lands and valleys of the Blue and Cœur d'Alêne Mountains.

A brief description of the Genesee Valley, in about the latitude of 46°, will apply in most respects to numberless others. This valley is ten miles from Lewiston, the capital of Nez Perce County, at the confluence of the Kooskooskie with the Lewis and Clark branch of the Columbia River, and is some fourteen miles long, and from half to one mile wide. The soil is a vegetable mold, slightly intermixed with sand, from two to three feet deep, resting upon a clay subsoil. Water, during the dryest part of the year, is found at the depth of 12 to 16 feet, pure and cold, while along the smaller valleys intersecting the Genesee are to be found numberless springs. Timber consists of pine, fir, tamarack, and cedar, and is inexhaustible. The hills are covered with the finest bunch-grass, which has remained green and tender all summer, upon which cattle and horses thrive as well as upon any of the tame grasses. Stock-raising is destined to be one of the leading pursuits, as the mild winters render it unnecessary to provide but a small amount of food; indeed, thousands of Indian horses and cattle go through every winter without any feed. There is only one man in many miles who had any crop the present season, and he had wheat, oats, and barley of a superior description. He also had fine vegetables of all the common kinds. There was frost every month the past summer on the low, moist land, but none on the hill-sides until the 25th of September. Apples, pears, peaches, plums and grapes, do splendidly along the Clearwater River.

NEW AGRICULTURAL SOCIETIES.—John F. Hauser, Grundy County, Tennessee, writes to this Department, under date of October 30, that the interests of agricultural progress must necessarily lead the farmers to this Department for advice and support, and that he takes pleasure in announcing the organization of the Agricultural Society of New Switzerland, composed of a Swiss colony in Grundy County, Tennessee, counting now twenty-eight members, and enjoying a healthy and flourishing condition. Heretofore, the Cumberland Mountains have been re-

garded by the native inhabitants as entirely unadapted to farming purposes, except for stock, fruit, and a few vegetables; but now this region is beginning to attract the attention of immigration, and will soon change the wild aspect into a lovely landscape of productive farms, aided by industrial and commercial enterprise. The erroneous notion of former days has been sufficiently disproved during the four years since the colony was founded. They have now to show specimens of wheat, rye, and oats, vegetables and fruits, grapes, &c., which will compare with similar products grown anywhere in the United States; and he hopes, in time, by a more practical and a better knowledge of the peculiarities of soil and climate, to surpass them. For such purpose their society was organized, and is laboring diligently.

Pure and Cheap Milk.—In London the names of those who are known to sell adulterated milk are published monthly, and, it is said, with good effect. The plan has been attempted in some of the cities of the United States, but only partially, and with very limited success. There is in London a company—the Aylesbury Dairy Company—which occupies premises covering an area of fifty acres of ground, the system being to procure and distribute milk from reliable sources and of an assured good quality, at rates which shall be reasonably remunerative to dairymen, and at the same time secure consumers against extortion from speculators, middle-men, and others. The company has been in operation long enough to have tested its practicability and beneficent effects, and it now supplies several thousand families once, twice, and, in some instances, three times a day, with pure milk. It commenced with a capital of fifty thousand dollars, but that has been increased to five hundred thousand, upon which a dividend of ten per cent. is paid. The price of milk furnished by the company has never exceeded eight cents a quart. The purity of milk may easily be determined by ascertaining the percentage of cream and solid matter which it gives. Genuine milk will average ten per cent. of cream and twelve per cent. of solid matter. A milk with less cream and solid matter than this has been skimmed or watered.

Stock Sales.—Mr. L. L. Dorsey sold, November 13th, at his stock-farm, eight miles from Louisville, Kentucky, 49 horses for $23,220, being an average of $472 per head. The range was from $3,600 for "Rolla Golddust," a gelding twelve years old, to $175 for a saddle-gelding.

Mr. Wm. Worfield, whose farm is near Lexington, Kentucky, had a large sale of short-horns, November 12th. Of the bulls sold, a list of twelve, with the prices and ages affixed, is given; six of them were calved in 1871, and six in 1872. The twelve sold for $3,350; average price, 279\frac{1}{6}$. The six calved in 1872 sold for $1,315; average, 219\frac{1}{6}$. The six calved in 1871, for $2,035; averaging 339\frac{1}{6}$. The range of prices was from $650 for "Loudon Duke 8th," calved November 22, 1871, to $50 for "Wexford," calved April 8, 1872. The latter was red and white. "Jack Tar," red, calved a month later, May 10, was sold to the same purchaser, J. H. Spears of Illinois, for $505. Of the cows sold, a list of thirty-seven is given, which brought a total of $13,641; average price, $368.67. The extremes in price were, for "Loudon Duchess 6th," roan, calved December 31, 1870, $2,025, and "Laura Lee," red-roan $61.

MARKET PRICES OF FARM PRODUCTS.

For November and December, 1872.

Articles.	November.	December.
NEW YORK.		
Flour, superfine State ..... per barrel..	$5 80 to $6 20	$5 90 to $6 30
extra State ..... do.....	6 90 to 7 00	7 00 to 7 80
superfine western ..... do.....	5 80 to 6 20	5 90 to 6 30
extra to choice western ..... do.....	6 80 to 11 00	6 90 to 11 00
extra southern ..... do.....	7 10 to 9 15	7 10 to 9 15
choice southern ..... do.....	9 20 to 12 00	9 20 to 12 00
Wheat, No. 1 spring ..... per bushel..	1 64 to ———	1 60 to 1 61
No. 2 spring ..... do.....	1 58 to 1 58½	.....
winter, red, western ..... do.....	1 60 to 1 63	1 63 to 1 68
white winter, western ..... do.....	1 90 to ———	1 76 to 2 05
Rye ..... do.....	85 to ———	91 to ———
Barley ..... do.....	70 to 85	90 to 92
Oats ..... do.....	38 to 50	49 to 55
Corn ..... do.....	65 to 66½	63 to 75½
Hay, shipping qualities ..... per ton...	20 00 to 21 00	22 00 to ———
prime, for retailing ..... do.....	25 00 to 30 00	28 00 to 36 00
Pork, mess ..... per barrel..	15 25 to 15 80	15 75 to 16 00
prime mess ..... do.....	15 00 to ———	15 25 to ———
Beef, plain mess ..... do.....	4 00 to 8 50	4 00 to 12 00
extra mess ..... do.....	8 50 to 10 00	12 00 to 13 50
Lard ..... per pound..	8⅛ to 8⅞	7⅞ to 8⅝
Butter, western ..... do.....	10 to 22	10 to 22
State dairy ..... do.....	24 to 35	24 to 35
Cheese, western dairy ..... do.....	12½ to 13⅜	12½ to 13⅜
State factory ..... do.....	12 to 15	12 to 14
Cotton, ordinary to good ordinary ..... do.....	16½ to 19⅜	16½ to 18⅞
low middling to good middli'g. do.....	19¼ to 21⅓	18⅝ to 21½
Tobacco, lugs, all grades ..... do.....	9½ to 10¾	9¼ to 10½
common to medium leaf ..... do.....	10 to 11½	10 to 11½
Wool, extra pulled ..... do.....	57½ to ———	61½ to 65
California, spring clip ..... do.....	.....	.....
California fall clip ..... do.....	26 to ———	33 to ———
Texas ..... do.....	24 to 38	42 to 43½
New York State fleece ..... do.....	.....	.....
Choice Ohio ..... do.....	.....	.....
BOSTON.		
Flour, western, superfine ..... per barrel..	5 25 to 6 00	5 00 to 6 00
extras ..... do.....	6 50 to 8 50	6 75 to 8 50
choice ..... do.....	8 75 to 11 50	9 00 to 11 50
southern extras ..... do.....	6 75 to 7 25	6 75 to 7 25
choice Baltimore ..... do.....	10 00 to 12 00	10 00 to 12 00
Wheat ..... per bushel..	1 60 to 2 00	1 60 to 2 00
Corn, southern yellow ..... do.....	71 to 72	72 to 73
western mixed ..... do.....	69 to 71	70 to 72
western yellow ..... do.....	71 to 72	72 to 73
Rye ..... do.....	85 to 90	1 00 to ———
Barley ..... do.....	75 to 1 10	90 to 1 20
Oats ..... do.....	40 to 56	45 to 56
Beef, western mess ..... per barrel..	11 00 to 12 00	13 00 to 15 00
western extra ..... do.....	11 00 to 12 00	11 50 to 12 00
Pork, mess ..... do.....	16 00 to 16 50	16 50 to 17 00
prime ..... do.....	12 00 to 12 50	12 50 to 13 00
Lard ..... per pound..	9 to 10	9 to 9¼
Butter, New York and Vermont ..... do.....	15 to 34	15 to 33
western ..... do.....	15 to 30	12 to 30

Market prices of farm products—Continued.

Articles.	November.	December.
BOSTON—Continued.		
Cheese, N. Y. and Vt., factory ....per pound..	$0 13 to $0 15½	$0 12 to $0 14½
New York and Vermont dairy..do.....	12½ to 15	11 to 14
Ohio factory, good to choice....do.....	12½ to 15	12 to 14½
Cotton, ordinary to good ordinary....do.....	17 to 20	16½ to 19
low middling to good middling do.....	20 to 23	19 to 23
Tobacco, lugs.....do.....	9 to 9¾	10 to 10½
common to medium leaf....do.....	10 to 12	11 to 12
Hay, eastern and northern.....per ton...	20 50 to 28 00	20 00 to 28 00
western choice.....do.....	.....	.....
Wool, Ohio and Pennsylvania.....per pound..	55 to 70	65 to 80
Michigan .....do.....	55 to 60	63 to 70
other western.....do.....	53 to 59	63 to 70
California.....do.....	20 to 45	32 to 52½
Texas.....do.....	35 to 45	45 to 55
pulled .....do.....	30 to 62	45 to 75
combing-fleece .....do.....	65 to 70	80 to 82
BALTIMORE.		
Flour, superfine.....per barrel..	5 50 to 8 75	5 25 to 8 50
extra .....do.....	6 50 to 9 25	6 50 to 9 25
family and fancy .....do.....	10 75 to 12 00	8 25 to 12 00
Wheat, red .....per bushel..	1 50 to 1 90	1 68 to 2 00
amber .....do.....	1 80 to 2 05	1 80 to 2 05
white .....do.....	1 80 to 2 05	1 85 to 2 10
Corn, yellow.....do.....	58 to 60	57 to 60
white.....do.....	60 to 68	57 to 63
Rye .....do.....	80 to 85	80 to 85
Oats .....do.....	39 to 43	42 to 47
Hay, western, good to prime.....per ton...	30 00 to 32 00	30 00 to 34 00
Beef, mess .....per barrel..	15 00 to 20 00	.....
extra mess.....do.....	23 00 to 25 00	.....
Pork, mess .....do.....	16 00 to ———	15 00 to 16 00
Lard.....do.....	8 to 10½	8 to 10½
Butter, choice and fancy.....per pound..	27 to 30	30 to 38
fair to good .....do.....	22 to 26	20 to 26
Cheese, western .....do.....	14½ to 15	14½ to 15
eastern .....do.....	14¾ to 15¼	15 to 15½
Cotton, low middling to middling ....do.....	19⅛ to 19⅝	18 to 19⅛
ordinary to good ordinary....do.....	——— to 18⅝	15⅞ to 18¼
Tobacco, lugs, Virginia and Ky....per cental..	8 00 to 9 50	8 50 to 10 00
common to medium leaf.....do.....	10 50 to 12 00	10 00 to 11 00
Wool, fleece, common to fair.....per pound..	43 to 54	45 to 50
tub-washed .....do.....	45 to 49	53 to 56
unwashed, free from burs.....do.....	30 to ———	36 to 40
pulled .....do.....	38 to ———	40 to 43
CINCINNATI.		
Flour, superfine.....per barrel..	5 00 to 5 75	5 25 to 6 00
extra .....do.....	6 75 to 7 00	7 25 to 7 40
family and fancy .....do.....	7 00 to 9 00	7 40 to 9 00
Wheat, winter red.....per bushel..	1 43 to 1 45	1 45 to 1 68
Hill.....do.....	1 60 to 1 65	1 60 to 1 65
white .....do.....	1 50 to 1 70	1 68 to 1 75
Corn .....do.....	37 to 41	40 to 44
Oats, white, good to prime.....do.....	31 to 33	32 to 34
mixed .....do.....	28 to 30	27 to 31
Rye .....do.....	55 to 70	70 to 72
Barley, prime to choice fall .....do.....	85 to 90	85 to 90
prime to choice spring.....do.....	80 to 85	78 to 83

Market prices of farm products—Continued.

Articles.	November.	December.
CINCINNATI—Continued.		
Hay, baled, No. 1 ..... per ton	$18 00 to $21 00	$18 00 to $21 00
lower grades ..... do	14 00 to 18 00	15 00 to 17 00
Pork, mess ..... per barrel	14 25 to 14 50	12 00 to ———
Beef, plate ..... do	12 75 to 13 00	15 00 to ———
Lard, city kettle ..... per pound	7⅞ to 8	7½ to ———
new prime steam ..... do	7⅞ ———	7¼ to ———
Butter, Western Reserve, choice ..... do	23 to 25	25 to 28
Central Ohio ..... do	20 to 22	16 to 25
Cheese, factory ..... do	15 to 16	14½ to 15½
Cotton, ordinary to good ordinary ..... do	16 to 17⅝	15¾ to 17⅜
low middling to good middl ..... do	18⅜ to 19½	18 to 19⅞
Wool, common to med. washed fleece ..... do	47 to 48	47 to 48
medium to fine ..... do	48 to 50	48 to 50
tub-washed ..... do	50 to 55	50 to 55
unwashed, clothing ..... do	30 to 35	30 to 35
unwashed, combing ..... do	46 to 48	46 to 48
pulled ..... do	35 to 37	35 to 37
CHICAGO.		
Flour, winter, extras ..... per barrel	8 50 to 10 00	8 50 to ———
spring, extras ..... do	4 75 to 6 75	5 75 to 6 75
Wheat, No. 1 spring ..... per bushel	1 17 to ———	1 18 to 1 19
No. 2 spring ..... do	1 07½ to 1 08	1 09⅞ to 1 10
No. 3 spring ..... do	96 to 97½	99 to 1 01
Corn, No. 2 ..... do	31¼ to 31¾	31 to 31½
rejected ..... do	30 to 30½	29 to ———
Oats, No. 2 ..... do	20⅝ to 21⅜	24 to 25
rejected ..... do	17 to 17½	22 to 23
Rye, No. 2 ..... do	51½ to ———	57½ to ———
rejected ..... do	46½ to 47	——— to ———
Barley, No. 2 ..... do	62½ to 64½	61 to 62
rejected ..... do	38 to 42	——— to ———
Hay, timothy, (on track) ..... per ton	15 50 to 17 00	16 00 to 18 00
prairie, (on track) ..... do	10 00 to 11 00	16 00 to 17 00
Pork, mess ..... per barrel	14 00 to 15 00	12 00 to 13 00
Beef, mess ..... do	8 00 to 8 50	8 50 to 9 00
extra mess ..... do	9 00 to 10 00	9 50 to 10 00
Lard ..... per pound	07⅝ to ———	07½ to 07⅝
Butter, choice dairy ..... do	25 to 26	24 to 28
medium to good ..... do	18 to 22	18 to 22
Cheese, New York factory ..... do	15 to 16	14 to 15
Ohio factory ..... do	13½ to 14½	12 to 13½
Wool, tub, common to choice ..... do	50 to 60	55 to 67
fleece-washed ..... do	38 to 52	45 to 57
pulled ..... do	40 to 45	40 to 45
SAINT LOUIS.		
Flour, spring extras ..... per barrel	5 00 to 6 00	4 80 to 7 30
winter superfine ..... do	4 00 to 4 25	4 50 to 5 00
extras to choice ..... do	4 50 to 9 00	5 25 to 9 50
Wheat, spring ..... per bushel	95 to 1 35	1 05½ to 1 25
winter, red ..... do	1 35 to 1 90	1 50½ to 1 90
white ..... do	1 48 to 1 65	——— to ———
Corn, mixed ..... do	30 to 41	33 to ———
yellow ..... do	41 to ———	33 to ———
white ..... do	50 to ———	34 to ———
Oats, white ..... do	26½ to 40	33 to 34
mixed ..... do	26 to 32	25¾ to 27½
Rye ..... do	52 to 55	58 to 61
Barley ..... do	45 to 85	55 to 1 00
Hay ..... per ton	13 00 to 18 75	13 00 to 23 00

Market prices of farm products—Continued.

Articles.	November.	December.
SAINT LOUIS—Continued.		
Pork, mess.....per barrel..	$16 00 to ———	$13 00 to $13 50
Beef, mess.....do.....	13 00 to $15 00	13 00 to 15 00
Lard, tierce.....per pound..	7¾ to 8¾	7¼ to 7½
keg.....do.....	9¾ to 10	7¾ to 8½
Butter, choice.....do.....	26 to 30	24 to 28
medium to fair.....do.....	18 to 24	15 to 25
Cheese, Ohio factory.....do.....	15½ to 16	14¾ to 15
New York factory.....do.....	15½ to 16	15 to 15½
Northwestern fact ory.....do.....	15½ to 16	15 to 15½
Cotton, middling.....do.....	18½ to 19	18 to 18½
Tobacco, lugs.....per cental..	7 75 to 8 75	——— to ———
common to medium leaf....do.....	8 50 to 10 25	——— to ———
Wool, tub-washed.....per pound..	50 to 56	65 to 67
unwashed.....do.....	28 to 32	40 to 43
NEW ORLEANS.		
Flour, superfine.....per barrel..	5 25 to ———	5 37½ to ———
extras.....do.....	6 00 to 8 25	5 50 to 7 25
choice.....do.....	8 25 to 9 75	7 50 to 10 50
Corn, white.....per bushel..	70 to ———	59 to 60
yellow.....do.....	68 to ———	59 to 60
mixed.....do.....	67 to ———	58 to 59
Oats, ordinary.....do.....	38 to ———	——— to ———
prime to choice.....do.....	38 to 40	42½ to 44
Hay, prime.....per ton..	25 00 to 27 50	25 00 to 26 00
choice.....do.....	28 00 to 28 50	30 00 to ———
Pork, mess.....per barrel..	17 50 to 19 50	13 50 to 14 00
Beef, mess, (Texas).....do.....	11 00 to 11 50	11 00 to 11 50
Butter, choice western.....per pound..	22 to 23	20 to 22
Goshen.....do.....	33 to 34	33 to 34
Cheese, western factory.....do.....	15 to 15½	——— to 14
New York cream.....do.....	17 to 18	17 to ———
western reserve.....do.....	——— to ———	——— to ———
Cotton, ordinary to good ordinary....do.....	16 to 18¼	16⅛ to 17⅞
low middling to good middling..do.....	18⅜ to 19½	17⅞ to 19¼
Tobacco, lugs.....do.....	8½ to 9½	8 to 9
low-leaf.....do.....	9½ to 10½	9¾ to 9¾
medium-leaf.....do.....	10½ to 11½	9 to 10¾
Wool, lake.....do.....	40 to ———	46 to ———
clean Louisiana.....do.....	35 to 37	40 to 42
SAN FRANCISCO.		
Flour, superfine.....per barrel..	3 75 to $4 10	3 90 to 4 00
extra superfine.....do.....	4 25 to 4 50	4 25 to 4 50
higher grades.....do.....	5 00 to 5 50	4 75 to 5 25
Wheat, State.....per cental..	1 45 to 1 62½	1 50 to 1 70
Oregon.....do.....	1 50 to 1 62½	1 50 to 1 70
Corn, white.....do.....	1 40 to 1 50	1 30 to 1 35
yellow.....do.....	1 37½ to 1 40	1 25 to 1 30
Hay, State.....per ton..	10 00 to 17 00	15 00 to 21 00
Pork, mess.....per barrel..	17 00 to 20 00	19 00 to 23 00
prime mess.....do.....	17 50 to 18 00	19 00 to 20 00
Beef, mess.....do.....	12 00 to 13 50	11 00 to 12 50
Lard.....per pound..	10¾ to 11½	10 to 11½
Butter, overland.....do.....	16 to 25	15 to 32½
California.....do.....	40 to 65	40 to 60
Oregon.....do.....	18 to 20	18 to 20
Cheese.....do.....	11 to 15	12 to 16
Wool, native.....do.....	10 to 20	12 to 20
California.....do.....	20 to 25	25 to 30
Oregon.....do.....	30 to 35	25 to 30

FOREIGN MARKETS.

WHEAT.—During October the weekly average price of wheat per quarter, in London, ranged from 56*s*. 7*d*. to 59*s*. In the quotations of the Mark Lane Express, American wheat is quoted at 59*s*. to 62*s*.; California, 66*s*.; English, 50*s*. to 64*s*.; German, 59*s*. to 71*s*.; Russian, 47*s*. to 61*s*.; Australian, 64*s*. to 67*s*. In Liverpool, American and California white maintained a steady maximum at 14*s*. 6*d*. per cental, ranging as low as 13*s*. Other varieties showed a gradual decline, red and southern ranging from 12*s*. 4*d*. to 13*s*. 6*d*.; spring, No. 1, 12*s*. to 12*s*. 9*d*. In Paris, prices per quarter ranged from 52*s*. 6*d*. to 56*s*. for white, and from 52*s*. to 54*s*. for red. The importations of wheat into the United Kingdom during the month amounted to 5,718,647 hundred-weight, of which amount 1,042,309 hundred-weight were from the United States—about 500,000 hundred-weight less than during October, 1871.

During the first three weeks of November the weekly averages of wheat in London, were from 56*s*. 6*d*. to 58*s*. 7*d*. per quarter; English white ranged from 58*s*. to 66*s*.; American, 58*s*. to 61*s*.; California, 65*s*. In Liverpool, American white was steady from 13*s*. 2*d*. to 14*s*. 6*d*. per cental: red winter and southern from 11*s*. 9*d*. to 12*s*. 8*d*.; spring No. 1, 11*s*. 9*d*. to 12*s*.; California white, 12*s*. 10*d*. to 13*s* 9*d*. In Paris, fine white wheat brought from 56*s*. to 58*s*. per quarter; red 53*s*. to 54*s*. At the opening of the month prices were too high for business, holders were generally firm and consequently but little activity was noticed.

FLOUR.—The quotations of the Mark Lane Express, for London, during October, were as follows: English, per sack of 280 pounds, 40*s*. to 57*s*.; American, per barrel, 26*s*. to 29*s*.; extra, 30*s*. to 34*s*. Liverpool: English and Irish superfines, per 280 pounds, 41*s*. to 46*s*.; the same, extra, 47*s*. to 56*s*.; Hungarian and Trieste, 61*s*. to 75*s*.; Chilian and Californian, 41*s*. to 49*s*.; American, Western State, 28*s*. 6*d*. and 30*s*.; ditto, extra, 29*s*. 6*d*. to 31*s*.; Baltimore and Philadelphia, 32*s*. 6*d*. to 34*s*.; Ohio, 32*s*. to 33*s*.; Canadian, 30*s*. to 32*s*. Imports of flour into the United Kingdom during October, 636,199 hundred-weight, of which 114,749 hundred-weight were from the United States. In Paris the prices of superior flour, on the spot, rose from 43*s*. 2*d*. per 280 pounds, at the beginning of the month, to 46*s*. 2*d*. in the first week of November.

In London, during the first three weeks of November, English flour is quoted at 40*s*. to 57*s*. per 280 pounds; American 25*s*. per barrel and 30*s*. to 34*s*. for extras. In Liverpool, English and Irish superfines ranged from 41*s*. to 46*s*. per 280 pounds; extras 47*s*. to 56*s*. American, per barrel, Western States, 28*s*. 6*d*. to 30*s*.; extra State 29*s*. 6*d*. to 31*s*.; Baltimore and Philadelphia, 32*s*. 6*d*. to 34*s*.; Ohio, 32*s*. to 33*s*.

INDIAN CORN.—Mark Lane, London: 27*s*. to 31*s*. per quarter for yellow, and 32*s*. to 35*s*. for white. Liverpool: per 480 pounds, American white, 30*s*. to 32*s*.; the same, yellow, 29*s*. 6*d*. to 30*s*. 6*d*.; Trieste, 30*s*. to 31*s*.; Danubian, 30*s*. to 32*s*.

During the first three weeks of November Indian corn in London, ranged from 27*s*. to 29*s*. per quarter for yellow, and from 31*s*. to 34*s*. for white. Liverpool prices unchanged.

WOOL.—London: Fleeces, Southdown hoggets, per pound, 1*s*. 9½*d*. to 1*s*. 10½*d*.; half-breed, ditto, 1*s*. 9½*d*. to 1*s*. 10*d*.; Kent fleeces, 1*s*. 10½*d*. and 1*s*. 11*d*.; Southdown ewes and wethers, 1*s*. 9*d*. to 1*s*. 10*d*.; Leicester ditto, 1*s*. 11*d*. and 2*s*. Prices during the first three weeks of November unchanged.

CHEESE.—London: per hundredweight, Cheshire, 60*s*. to 70*s*.; double Gloucester, 56*s*. to 76*s*.; Cheddar, 70*s*. to 86*s*.; American, 54*s*. to 64*s*. November, (first three weeks) Cheshire, 60*s*. to 76*s*. per cwt., double Gloucester, 64*s*. to 78*s*.; Cheddar, 68*s*. to 84*s*.; American, 60*s*. to 72*s*.

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